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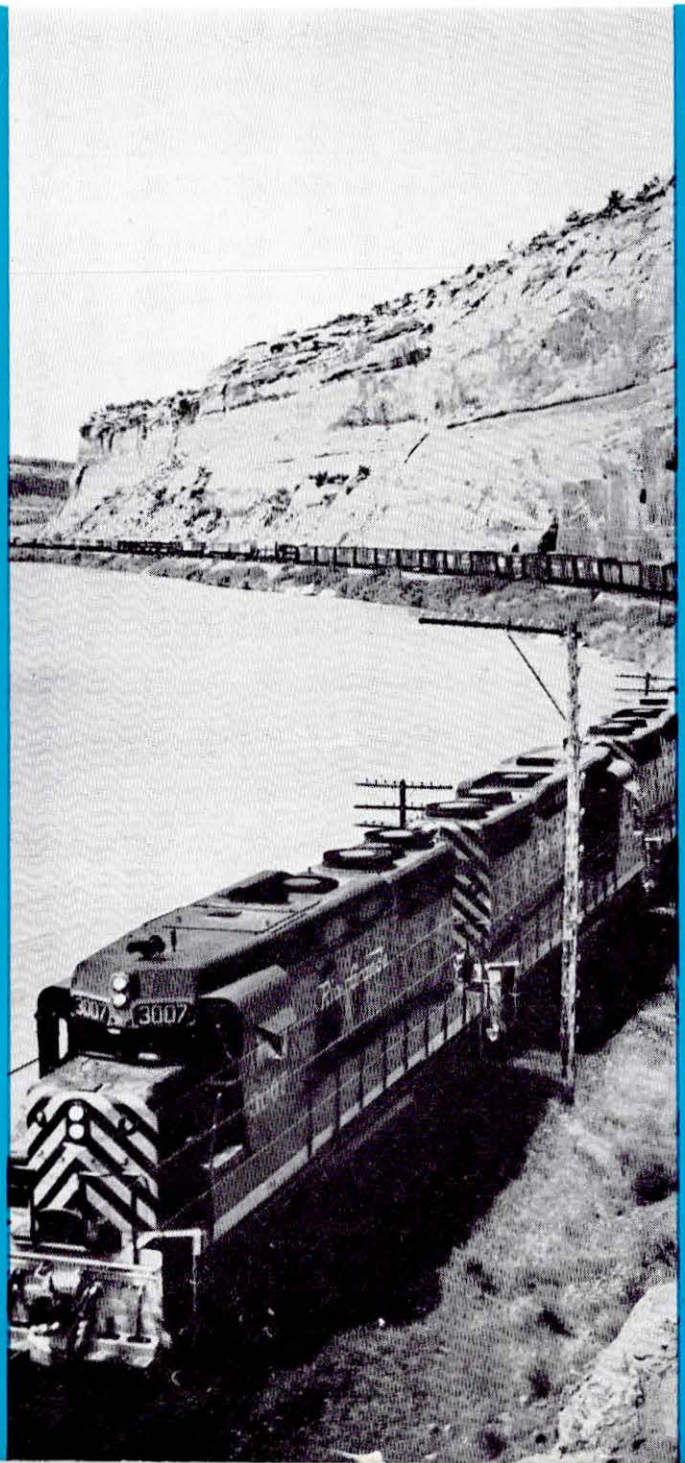
Rising demands on equipment pose **tough problems** for Mechanical Division . . . . . p. 19

June 22, 1964

RAILWAY AGE WEEKLY

NEW MOTIVE POWER: THE BIG PAYOFF

p. 20



CAR SUPPLY: THE CRISIS FADES

p. 25

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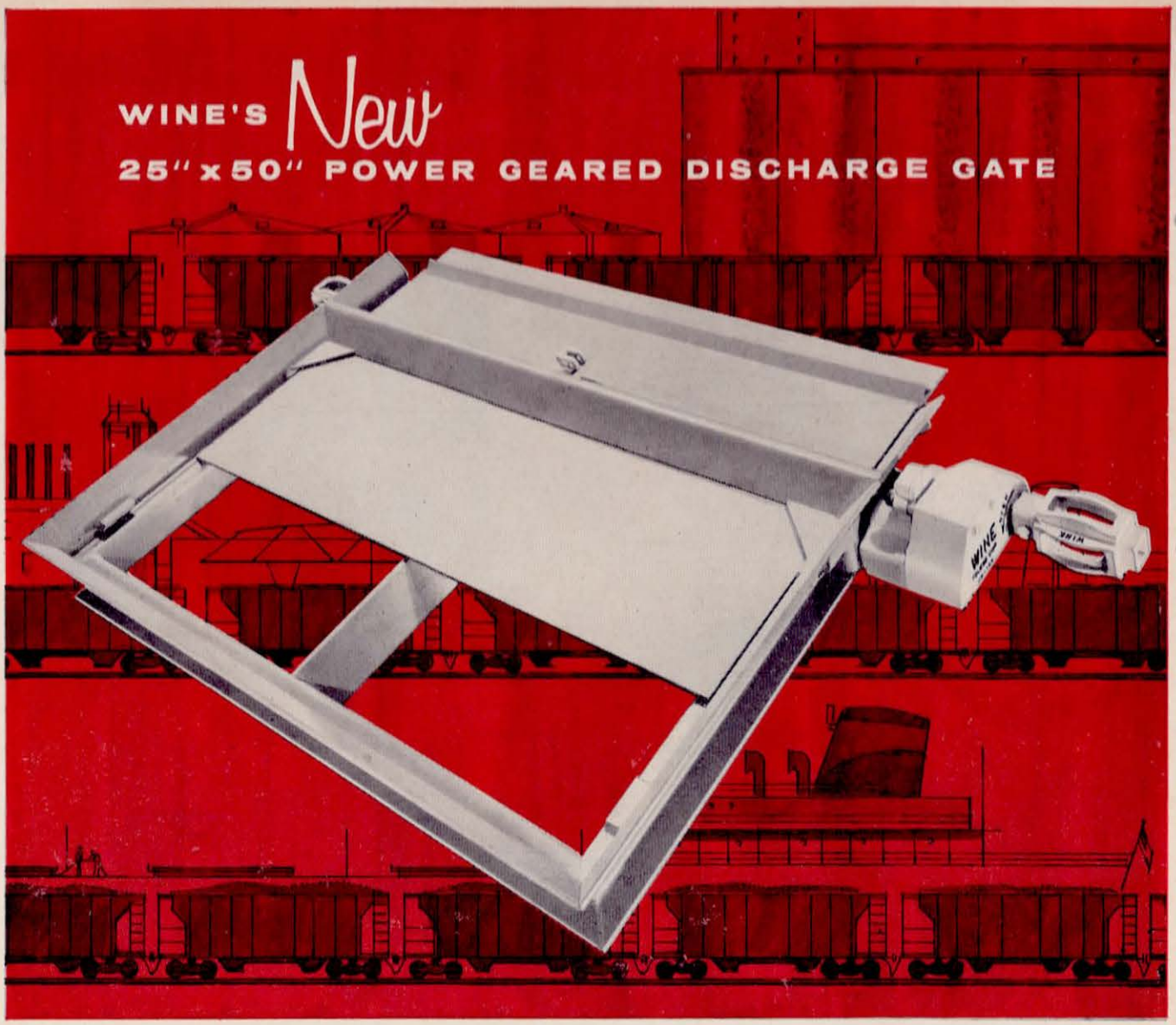

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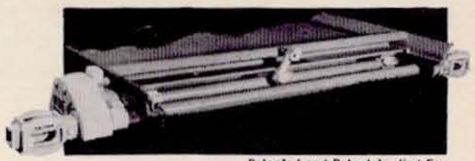

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RAILWAY AGE WEEK AT A GLANCE

June 22, 1964 • Vol. 156, No. 24

Cover photo: D&RGW's ACD freight train in the Colorado River's Ruby Canyon

BRT walkouts: What's the issue?

Trainmen struck six southwestern roads, claiming local grievances. The crew-consist issue may be the real reason.....**p.11**

Tough problems for Mechanical Division

The demands on today's freight equipment will be a prime topic at this week's meeting of mechanical officers.....**p.19**

Hope for '64 transport bill dims

Chairman Harris of the House Interstate Commerce Committee will carry on the fight for a transport bill next year....**p.38**

The Action Page—Utilization is the master key

Improved utilization of rolling stock adds to the equipment supply and produces greater net earnings per unit.....**p.66**

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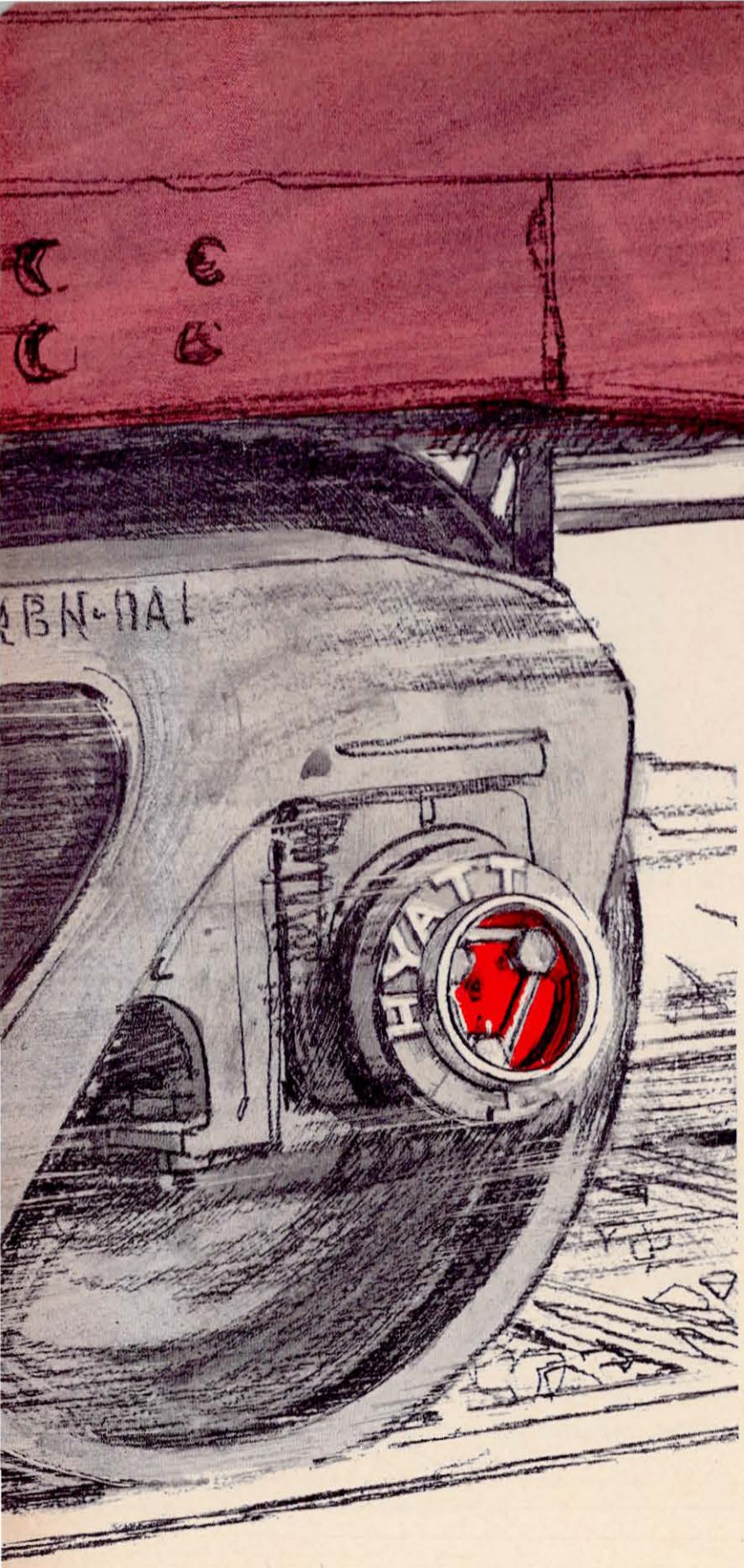

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SHORT AND SIGNIFICANT

Spending picture: Bright and getting brighter

It now appears that railroad capital expenditures this year will be nearly a third higher than in 1963. Latest forecast from the Department of Commerce puts railroad capital outlays this year at $1.44 billion, a 33% increase over '63. The estimate is based on a May survey conducted by the Department of Commerce and the Securities and Exchange Commission. An earlier survey, by the ICC, arrived at an estimate of $1.27 million.

Employment up slightly

Class I railroad employment averaged out at 670,634 in mid-May—a slight (0.4%) increase over April but 2.03% below the year-ago figure, reports the ICC's Bureau of Transport Economics and Statistics.

Transport groups unite on illegal carriage

Legal carriers are trying to heat up the war against bootleg trucking. The Association of American Railroads, American Trucking Associations and Transportation Association of America joined forces to urge a Senate Appropriations Subcommittee to support additional funds to strengthen ICC enforcement activities. The joint AAR-ATA-TAA statement noted that in 1963 about 4,000 cases against illegal for-hire carriers were successfully prosecuted in the courts, but more needs to be done: illegal transport diverts potential revenues of between $500 million and $1 billion a year from regulated carriers.

AAR's Buford joins P&LE

Curtis D. Buford, AAR vice president, operations and maintenance since 1959, was appointed executive vice president of the Pittsburgh & Lake Erie. The appointment, which becomes effective Sept. 1, was announced last week by Alfred E. Perlman, P&LE chairman of the board and president of the parent New York Central.

Last word on work rules?

A last-minute disagreement between the carriers and the Switchmens' Union of North America flared up last week—over one word in the agreement language settling the so-called secondary issues. SUNA wanted the word "entirely" deleted from Paragraph B, Section 1. The deletion would permit use of helpers on self-propelled equipment outside switching limits. The disagreement will be ironed out if the other four operating unions agree to deletion of the word, according to Neil P. Speirs, SUNA president. He said the Conductors had already written to NRLC agreeing to the deletion, that he expected the Engineers and Firemen to agree and that he had already talked to the Trainmen about the matter.

LBJ helps launch Bay Area Transit

President Johnson was scheduled to fly to San Francisco last week to join California Governor Edmund G. Brown in groundbreaking ceremonies at the $1-billion Bay Area Rapid Transit District.

New York plans new commuter test project

Will better, faster service bring commuters back to the rails? The answer will be sought in a two-year, $1.9-million demonstration project that will get under way July 1 on the New York Central's Harlem Division. Ten daily trains will be added, schedules will be revamped, parking lots will be built at outlaying stations, rail service will be coordinated with feeder buses. The project is a joint effort of the Tri-State [New York, Connecticut, New Jersey] Transportation Committee, Federal Housing & Home Finance Agency, the State of New York, and the NYC.

MONDAY MORNING REPORT

A significant move: new car specifications

At this week's AAR Mechanical Division meeting it will probably be reported that letter ballot approval has been given to a thorough revision and expansion of the Division's Fundamentals of Car Design. Such approval can set off an extensive overhaul of numerous other freight-car specifications. The proposed 263-page Fundamentals, produced by a three-man task force of railroad mechanical engineers working full-time for over a year, has been described as one of the Division's "most significant activities" by C. D. Buford, AAR vice president.

No place for design weaknesses

In the past, car design has been left largely to the individual engineer. Today, however, railroads have found it impossible to operate with cars which might incorporate design weaknesses. To overcome such a situation, the Division sponsored the preparation of standards much more comprehensive than had ever before been produced. The Fundamentals will outline design data considered essential to sound car design, and will indicate the characteristics of carbuilding materials. Forces such as live loads, lift-truck wheel loads, impacts and other factors needed to calculate car structures, will, for the first time, be specified.

Big cars get high priority

Recently approved Equipment Outline Plate C, allowing the building of interchange cars 10 ft 8 in. wide and 15 ft 6 in. high, is also part of the new specification. That portion of present AAR specifications covering vertical center of gravity of cars and the horizontal and vertical curves on which they must operate is also to be changed. Most important will be the raising of the present 84-in. limit on a car's vertical center of gravity to a new 98-in. limit. Limiting truck dimensions and design of braking systems will also be revised.

Hotbox attack on the move

The Division has been moving ahead on other fronts, too. It continues to attack the hotbox situation, being far from satisfied with the achievement of an already outstanding hotbox record which reached an all time high of 1,249,223 car miles per setoff between division terminals last March. By tightening up on specifications for lubricating devices, by restricting their renovation, by journal-box assembly changes, the Division has established a new base that will make it possible for the railroads to greatly improve the record. It is aiming for the two-million mile mark as a minimum goal.

Operating needs in forefront

Other knotty operating problems are being tackled. The Division is moving strongly to curtail load transfers from one car to another while en route because of car defects that existed when cars were loaded. To reduce derailments or accidents caused by failures of car parts it has strengthened the rules pertaining to car operating parts such as truck components, couplers and draft gears. These are only highlights of the AAR Mechanical Division's work. They show that the Division is not overcautious, is not bound by "red tape," can respond to the needs of the railroads for equipment to serve the shippers safely and economically.

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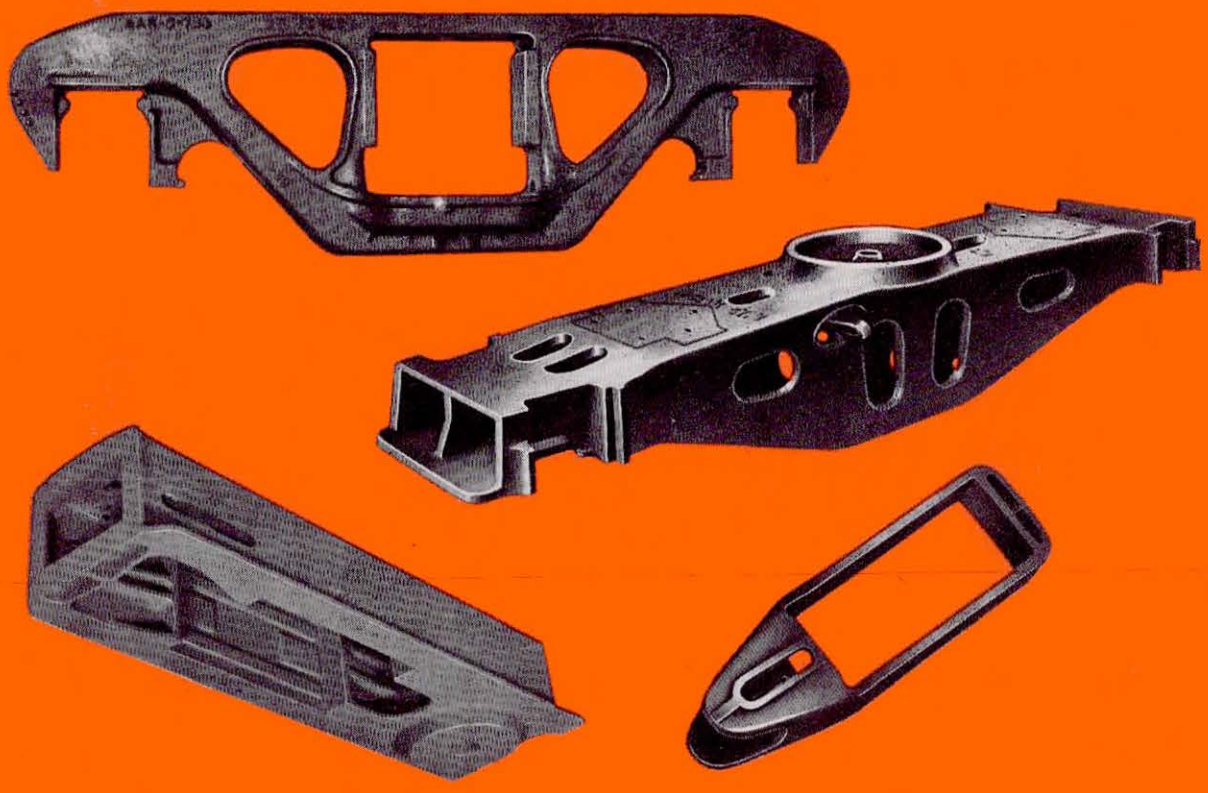

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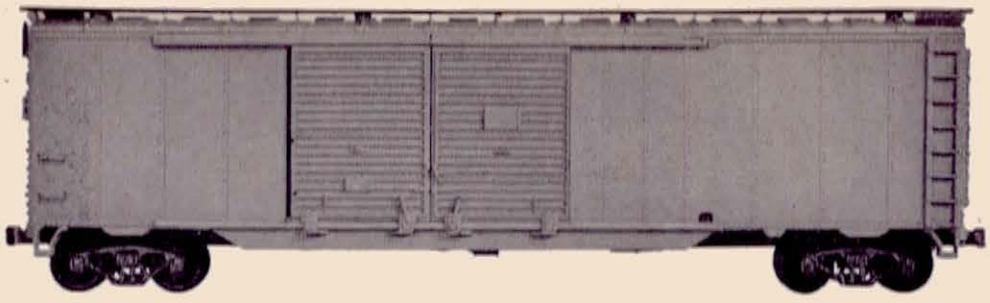

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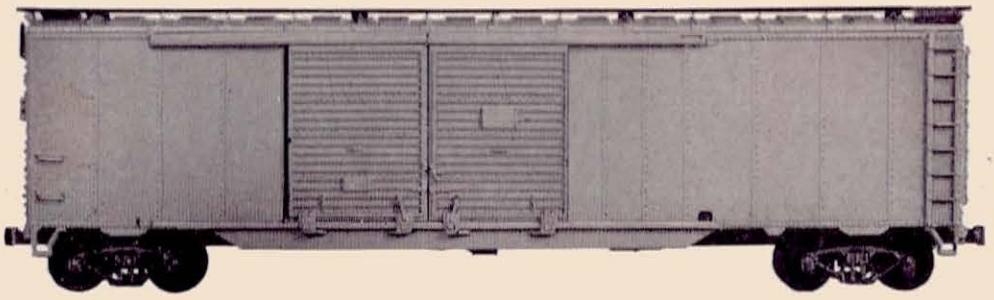

This car goes over 2,000,000 miles per hot box setout

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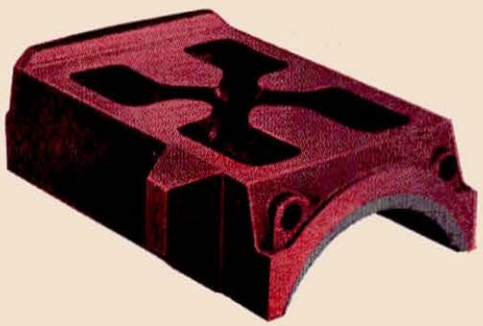

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BRT walkouts: what's the issue?

The Trainmen struck six southwestern roads—supposedly over specific local grievances. The carriers suspect the crew-consist issue lies at the heart of the matter.

It may be a long, hot summer in court—if last week's work stoppages are going to be the new pattern in union-carrier relations.

The Trainmen jabbed a multi-million-dollar work stoppage at six southwestern railroads early in the week and failed in a move to strike a seventh.

Brotherhood of Railroad Trainmen spokesmen explained the strikes one way in Cleveland—union headquarters—but another way at the local level. Headquarters said the strikes were not related, that separate contract disputes were responsible on each of the struck carriers. Local union officers at widely separated places in the Southwest, however, seemed to be saying that crew-consist changes were behind the walkouts. Carrier lawyers were eyeing this difference in Trainmen tales with great interest.

With the same precision and secrecy so evident in the strike against the Illinois Central in April (RA, April 13, p. 11), the BRT struck Missouri Pacific, Southern Pacific's Texas and Louisiana lines, Texas & Pacific, Texas Mexican, Katy, Port Terminal Railroad Association of Houston—and tried to strike the Gulf, Colorado & Santa Fe.

First word for the carriers came Sunday afternoon. The railroads got a temporary injunction against a Monday morning walkout from Washington, D.C., District Court Judge Alexander Holtzoff late Sunday night—based on Arbitration Board 282's award.

A union spokesman in Cleveland described the walkouts as being over "major contract issues, most of which predate the Presidential Railroad Commission. Most of these issues have already gone through the Railway Labor Act procedures." He said the situation on the southwestern carriers was "not a joint strike," and that "any of the struck roads can settle separately."

Carrier officers were skeptical. "We know these walkouts are over the crew-consist applications going into effect," noted one veteran labor-relations officer: "The Santa Fe, for instance, while mentioned in the BRT's wire to NMB, was not struck. Santa Fe's management was able to get hold of their general chairman and head off the strike. It could be a coincidence—but I doubt it. It is noteworthy that Santa Fe does not have crew-consist awards in effect—and has not even scheduled the special board to implement the crew-consist award."

● **BRT's 'major contract issues.'** Each of the railroads shut down was struck for different reasons said the BRT.

MoPac was struck for alleged changes in its medical rules and regulations for employees, and for failing to have enough men available for relief assignments, thereby causing some brakemen and switchmen to postpone their vacations. T&P was struck because of a contract dispute over extra work and over who gets paid to do what work. SP's T&L lines were shut down by the BRT because of a man who was fired, allegedly, because he obeyed a conductor's order. Katy was struck because of a "refusal to bargain" on some unspecified issues.

● **Other union views.** As the strike went into its second day, it became evident that the first-class union security prior to the strike was not matched by any comparable care in telling the membership what to say the disputes were about. Newspapers, radio and television programs in the Southwest began carrying stories, comments and interviews with strikers and union officers who gave out stories to reporters that may, in time, embarrass the BRT leadership.

The East St. Louis, Ill., Evening Journal carried an interview with two BRT local officers explaining the strike thus: "They're [MoPac] reducing our switching crews from three men to two, and they're taking away our seniority and hospital rights." The other BRTer added: "They want us to work shorthanded."

The real beef?

A local chairman of the BRT, speaking over a radio program originating at Big Spring, Tex., stated that the BRT was striking "because the railroad will not hire more men." Another local union officer told a carrier officer that the BRT was striking "because the railroads took off the third man."

Temporary injunctions were finally secured from state and federal courts by MoPac, T&P, HB&T, SP, Texas Mexican and Katy. By last Wednesday, most of the strikers were back and the carriers headed back toward full operation. The cost of the strike, while almost impossible to estimate so soon, will be at least "several million dollars," according to one industry spokesman.

Late in the week, BRT spokesmen reiterated that the strike was not a joint strike and that the walkout had nothing to do with the crew-consist awards being implemented on some of the struck carriers.

Carrier spokesmen, however, don't see it that way. A top industry observer called the strike "totally irresponsible" and noted that the BRT—which expects to go to court this week to get judicial definition of the scope of the issues it says triggered the walkouts—may get to go to court in a totally unexpected fashion. "If we can prove that the BRT is harassing us with these expensive stoppages we will make it mighty hot—and expensive—for Mr. Luna and the Trainmen," he said. ■

WATCHING WASHINGTON WITH WALTER TAFT

TAFT

• **THE AAR BOARD OF DIRECTORS** will have before it this week a proposal to give regional traffic associations jurisdiction over demurrage and storage charges, and mileage allowances for private cars. Also before the board at its June 26 meeting will be a proposal to increase the mileage allowance for privately-owned tank cars, which is now 5.5 cents.

Joint action on these matters, along with per diem, is now covered by Section 5a Agreement No. 7, which is administered through the AAR's Operating-Transportation Division. Like all agreements entered pursuant to Section 5a, which the Reed-Bulwinkle Act added to the Interstate Commerce Act in 1948, No. 7 accords antitrust immunity for joint actions.

TRANSFER to the regional traffic associations would put demurrage, storage and mileage-allowance matters under the regional Section 5a agreements. These now cover rates, charges for accessorial services and allowances. They are No. 2 in the West, No. 3 in the East, and No. 6 in the South.

TRAFFIC OFFICERS are proponents of the change. They argue generally that demurrage and storage charges and mileage allowances are part of the competitive-charge set-up, and thus, like rates, should be under the control of traffic officers.

AS TO TANK-CAR ALLOWANCES, proposals to increase the 5.5-cents-per-mile rate include suggestions that there should be a multi-level scale of allowances. That would be in line with the multi-level per diem scale for rental of railroad-owned cars which became effective the first of this year.

SHIPPER OPPOSITION to the proposed transfer may be expected, especially as to demurrage. Shippers have long opposed use of demurrage charges as revenue producers. They have insisted that such charges should be imposed only to keep cars rolling by discouraging their use for storage.

• **TRAIN TRAVEL IS PREFERRED** by the ICC's Chairman, Commissioner Abe McGregor Goff. He likes "a safe, comfortable train, where I can stretch out, move around, or read." He patronizes air lines only "when time is important."

CHAIRMAN GOFF stated this preference at a Transportation Safety Conference sponsored by the General Federation of Women's Clubs. "In these days of highway casualties," he advised the delegates to use commercial passenger services—"if you want to arrive safely where you are going."

THE CHAIRMAN'S ADVICE was sound, according to final travel-fatality figures for 1963 which were released last week by the AAR. Private automobile figures in the AAR compilation are those of the National Safety Council. On the basis of fatalities per 100 million passenger-miles, the compilation shows that auto travel last year was about 33 times more hazardous than travel by rail, 19 times more hazardous than travel by air, and 10 times more hazardous than travel by bus.

THE AIR LINES thus had a year in which they were nearly twice as safe as buses, although 1963 air travel was nearly twice as hazardous as travel by rail. The bus lines' 1963 rate was their worst in a decade—0.23 passenger fatalities per 100 million passenger-miles. The railroad and air line rates were 0.07 and 0.12, respectively. The private-automobile rate was 2.3.

Coal exports to rise

Long-range prospects for America's export coal markets are good, especially in Europe, according to two men who should know: H. Preston Henshaw, C&O coal traffic manager, and Lawrence T. Forbes, N&W manager—export coal.

Both men gave their estimates of the situation in talks before the National Coal Association's Convention in New York City.

Mr. Henshaw noted that, "according to the best estimates, the free world's energy requirements by 1985 will double what they are now. Translating this into terms of coal, we get a starting figure of 9.6 billion tons. Total energy requirements of the European Economic Community, whose countries are our largest consumers, were slightly over 500 million tons equivalent in 1962.

"Those nations," he went on, "are expected to require as much as 850 million tons annually by 1975, up 70% compared with requirements two years ago."

• **Rail industry stake.** Mr. Henshaw added "there is no doubt about the railroad industry's commitment to the coal export business . . . my own railroad, the Chesapeake & Ohio, alone spent $65 million in 1963 on facilities and equipment to transport coal. We plan to spend another $69 million this year for the same reason."

N&W's Forbes agreed with this general evaluation. Mr. Forbes spent May in Europe as a member of the West Virginia Trade Commission, and came back "with a general feeling of optimism because the good news I received far outweighed the bad."

One example he gave was of pressure on British steel prices. Saying that planned steel production increases can not be made there at competitive cost with existing coal supplies, he predicted that coal import restrictions would be relaxed within three or four years.

• **Other examples.** Mr. Forbes registered similar optimism regarding the French, German and Spanish markets for American coal within the next few years.

Mr. Forbes made plain the N&W's role: it is spending $1 million a week building new 95-ton coal hopper cars. ■

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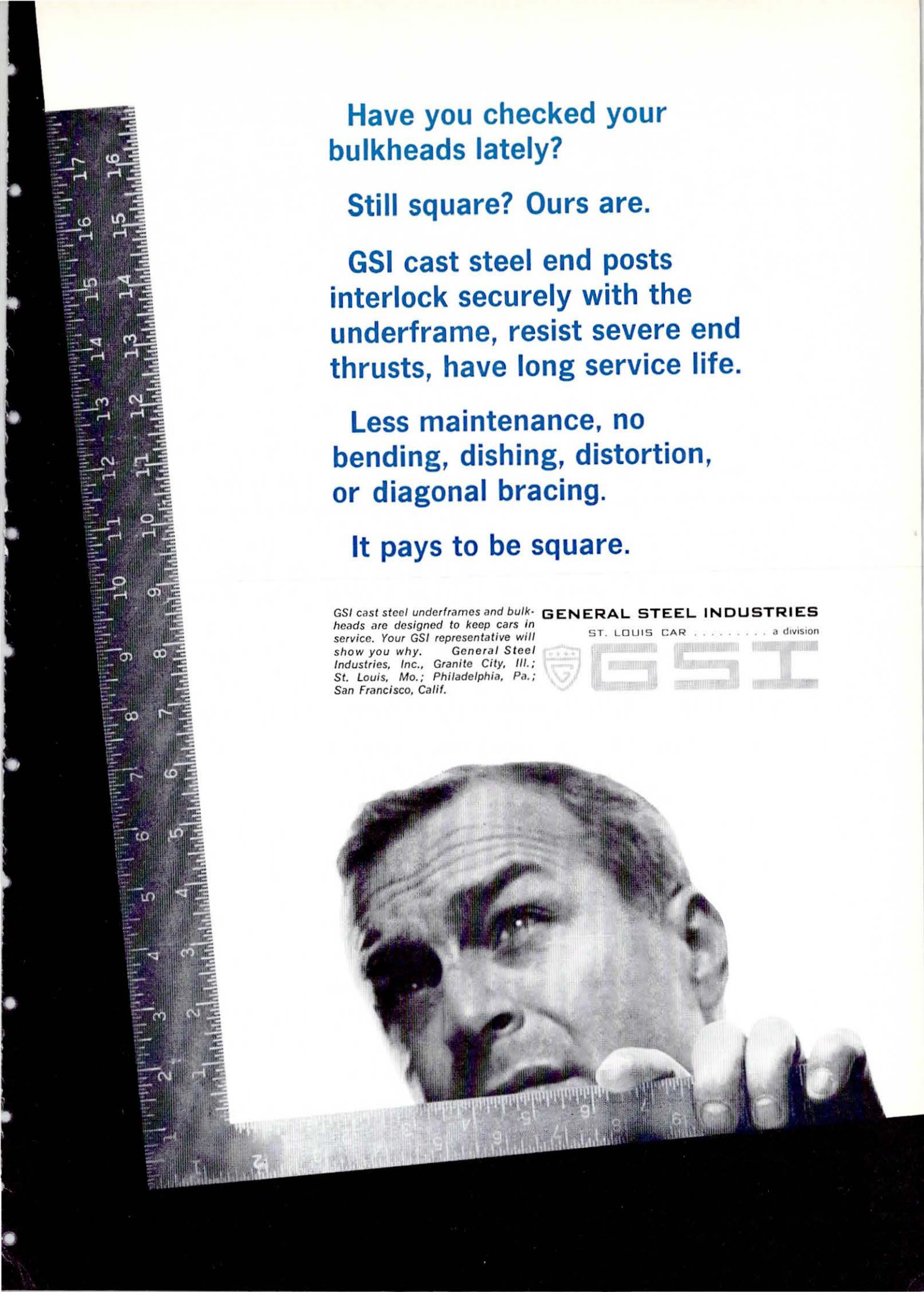

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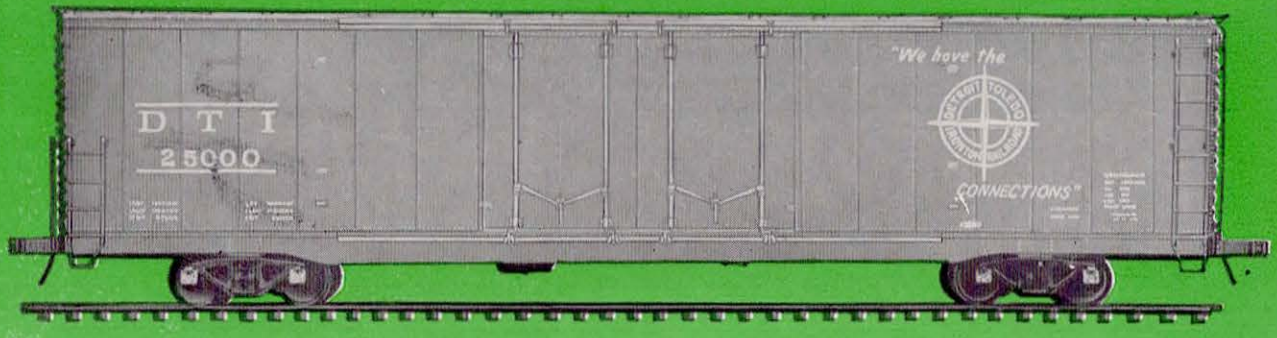
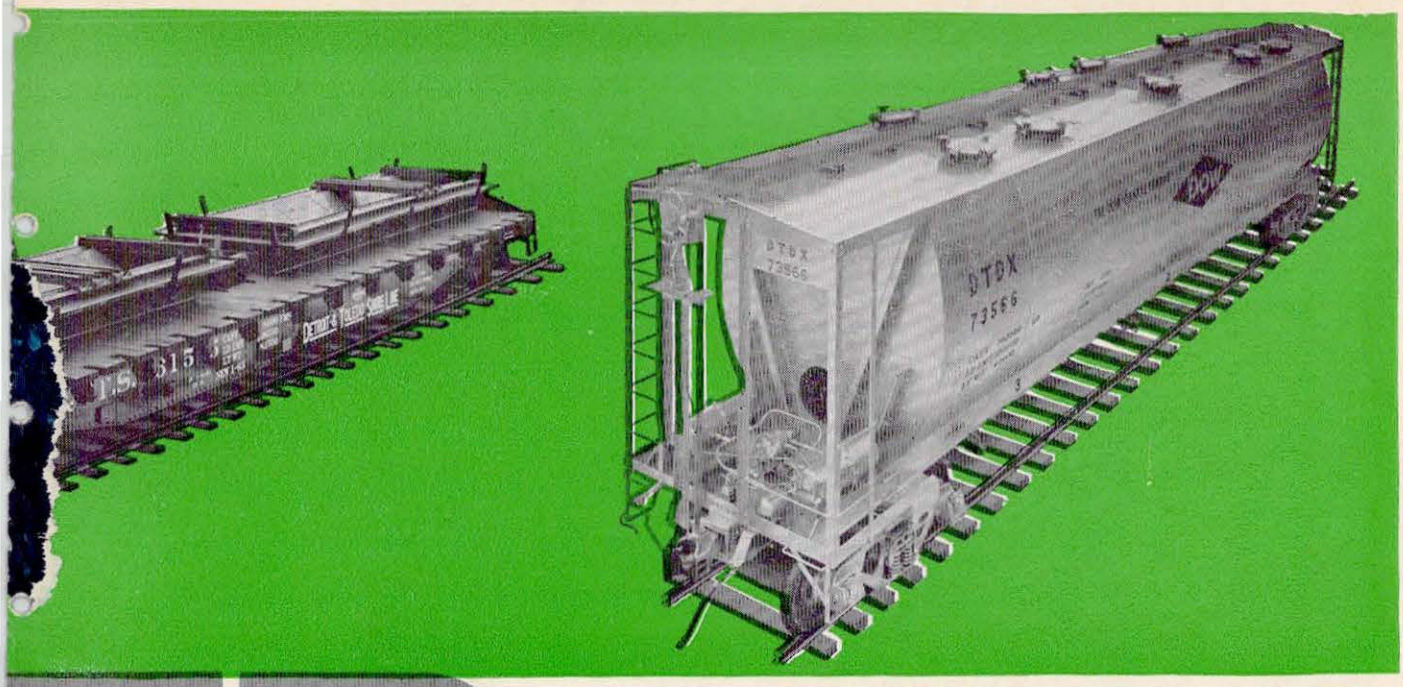




GREENVILLE

If you need cars which handle more cargo at less cost, investigate the new cars coming off the line at Greenville. Many are already in revenue service . . . some leased, some purchased.

Greenville builds, rebuilds, or upgrades and fits these units with special features to meet specific customer requirements. Some of the newest designs were introduced first by Greenville.

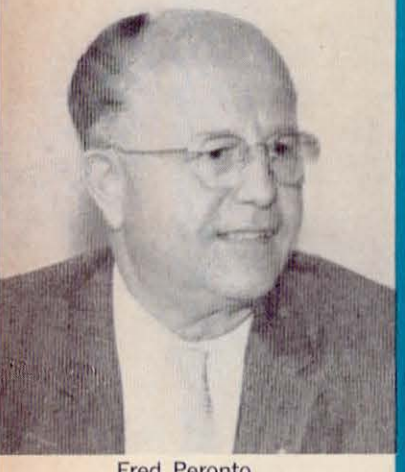
The McGregor roof car is a 50-ton hopper converted to 70-ton to carry 25% more payload under a folding, water-tight roof. The coil car—new, or economically converted from a flat—carries steel coils in shock-proof cradles under removable covers. The aluminum and stainless covered hoppers do not require expensive linings.

If you have a key cargo which has to move faster at less cost, check your requirements with Greenville. The features you need may already exist in a Greenville design.

GREENVILLE STEEL CAR COMPANY
Subsidiary of Pittsburgh Forgings Company
GREENVILLE, PENNSYLVANIA

J. A. Welsch, IC
Chairman

J. H. Heron, NYC
Vice Chairman



Fred Peronto
Exec. Vice Chairman

F. H. Stremmel
Secretary

AAR Mechanical Division Annual Meeting

Tuesday, June 23

Address—W. A. Johnston, president, Illinois Central.
Address—C. D. Buford, vice president-operations and maintenance, AAR.
Address—Chairman J. A. Welsch—general superintendent motive power, Illinois Central.
Action on Minutes of 1962 annual meeting.
Appointment of committees on subjects and resolutions.
Unfinished and new business.
Report of General Committee.
Report of Nominating Committee.
Discussion of Committee reports:
- Locomotives and Locomotive Fuels and Lubricants;
- Wheels and Axles;
- Specifications for Materials;
- Electrical equipment—Rolling stock;
- Safety Appliances.

Wednesday, June 24

Address—F. G. McGinn, vice president-operations, Milwaukee Road.
Discussion of Committee reports;
- Arbitration;
- Prices for Labor and Materials;
- Journal Roller Bearings;
- Loading Rules;
- Brakes and Brake Equipment;
- Couplers and Draft Gears.

Thursday, June 25

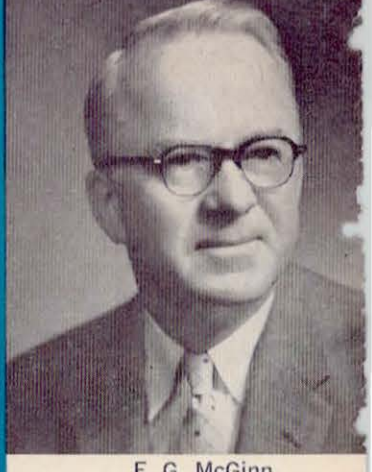
Address—Hon. K. H. Tuggle, Commissioner, ICC.
Discussion of Committee reports:
- Freight and Passenger Car Construction;
- Tank Cars;
- Lubrication of Cars and Locomotives.

Election of members of General Committee.
Report of Committee on Resolutions.

All Sessions at Hotel Sherman, Chicago

W. A. Johnston
Illinois Central

C. D. Buford
AAR



F. G. McGinn
Milwaukee

K. H. Tuggle
ICC

Chicago: Meeting those equipment demands

The new challenges to railroading—and the stresses and strains that accompany them—will get the attention of mechanical-department officers at their annual meeting. High on the discussion agenda will be the problem of what to do about growing demands being made on freight equipment.

This is the week when most railroad mechanical departments will be "headquartered" in Chicago—the week of the AAR Mechanical Division's 36th annual meeting.

During the three-day convention, mechanical-department officers will hear from five major figures in the transportation business, pore over and discuss 14 committee reports—and generally compare notes on how they can best meet the challenge posed by new railroad marketing concepts and operating practices. Major consideration will be given the problems created by the increasingly severe demands being placed on freight equipment.

● **IC's Johnston leads off.** Keynoter for the meeting will be Illinois Central President Wayne A. Johnston—and he's expected to make a strong pitch for stepped-up technological development as the key to maintaining the railroads as a vital part of the economy, helping the industry to prosper and creating better jobs for railroad personnel.

Following Mr. Johnston on opening day—June 23—will be C. D. Buford, vice president-Operations and Maintenance Department, AAR; and J. A. Welsch, IC's general superintendent motive power and Mechanical Division chairman, who will review the division's accomplishments over the past year and project what the group hopes to do in years ahead.

● **Special-equipment problems.** The second day will lead off with F. G. McGinn, Milwaukee Road vice president-operations, who will cover a basic problem—design, maintenance and utilization of special equipment.

Opening speaker on the convention's final day—June 25—will be Commissioner Kenneth Tuggle of the ICC.

Over the three-day period, Mechanical-Division delegates will also be working with reports ranging from locomotives and fuels and lubricants to roller bearings, from brakes and brake equipment to freight and passenger car construction.

In all areas, they'll be relating the mechanical-department function to the new demands being placed on it by changing railroad technology and by the new needs of traffic and operating departments.

● **Mounting pressures.** With the increasing emphasis on customer-orientation of rail service has come a virtual multiplication of the number of types of freight cars in service. At the same time, operating departments are under new pressures for faster scheduling and perfect on-time performance.

Individually and collectively, the new demands spill over into the mechanical department.

Over the past year or so, the industry has seen one of the greatest periods of technological improvement yet to take place. All three major locomotive builders have placed new and improved units on the market—and the development of new designs in specialized freight cars has been (and continues to be) an unending process.

In special reports on following pages —coinciding with the Mechanical Division meetings—Railway Age explores some of the most significant aspects of this year of advancing technology.

There's the experience of Atlantic Coast Line with its six-axle diesel-electrics from Alco and General Electric (Electro-Motive six-axle units will be delivered later this year). There's the record of performance of EMD's GP30s on the Denver & Rio Grande Western. And there's the report on the delivery of Alco's first Century 855 units to the Union Pacific.

Freight-car developments are covered in a review of 1963-64 performance—and a look to the future—in terms of designs, utilization, marketing and operational developments.

● **Good attendance expected.** This year's Mechanical Division meetings will be the first full-scale sessions since the three-day 1962 convention (last year, a two-day interim business meeting was held during the summer, followed by a one-day meet at the American Railway Progress Exposition in October).

Mechanical Division officers are looking for a registration total surpassing the 1962 figures—which showed more than 960 persons, including 326 railroad officers, attending the meeting. ■

GE's six-axle, 2,500-horsepower U25C delivers 79,500 pounds tractive effort, 28,700 more than four-axle model.

NEW MOTIVE POWER—1

ACL casts big vote for six-axle units

Service performance has demonstrated the value of six-axle diesel-electric locomotive units to the Atlantic Coast Line. The road's eight new six-axle units are handling approximately one-third more tonnage than four-axle models of comparable horsepower.

● **Other benefits, too.** The ACL got more than increased tonnage ratings when it acquired the new units. As the road's president, W. Thomas Rice, said when accepting delivery of one of the six-axle designs, "These higher horsepower locomotives will make it possible for us to handle priority cargoes on priority schedules with fewer locomotives."

Each of the eight six-axle designs released two of the road's older 1,350- and 1,500-horsepower locomotives for other service. The 16 older units released were welcome, because ACL had been operating on a close margin of power.

Why would a so-called flat railroad need six-axle locomotives? This question was asked when Atlantic Coast Line became the first mainline road to order the new six-axle diesel electrics.

● **Terrain changed.** Explaining ACL's interest in the six-axle locomotives, J. W. Hawthorne, the road's assistant vice president-equipment, says, "Most people do not realize that our system changed from a relatively flat one to a railroad with considerable grade territory when we took over the Atlanta, Birmingham & Coast and the Charleston & Western Carolina. About 55% of our diesel unit miles is now made in territory with grades of 0.75% or more."

ACL decided that through this hilly terrain to the west it could utilize advantageously the greater tractive-effort and better adhesion characteristics of the new six-axle locomotives. It took delivery, in December 1963, of the first four General Electric six-axle, six-motor, 2,500-horsepower U25C locomotives to go to a common carrier.

Alco's six-axle, 2,750-horsepower Century 628, weighing 367,000 pounds, produces 79,500 pounds tractive effort at 10.4 miles per hour, 82,500 pounds at 10.0 mph.

Oro Dam Constructors had received the first of these models about three months earlier (RA, June 15, p. 16). ACL got the first Alco Century 628s in December 1963 and January 1964, when four of these six-axle, six-motor 2,750-horsepower units were placed in service.

ACL will also get the first of the General Motors six-axle, six-motor, SD-35 2,500-horsepower locomotives later this year. It placed in service the first of GM's four-axle, four-motor, 2,500-horsepower GP-35s on Nov. 7, 1963.

● **Tractive effort: 79,500 lb.** The U25C is 64½ feet long, weighs 361,000 pounds, has a 2,900-gallon fuel tank and delivers tractive effort of 79,500 pounds at 9.2 miles per hour. The Century 628 is 69½ feet long, weighs 367,000 pounds with its large 4,000-gallon fuel tank and delivers 79,500-pound tractive effort at 10.4 miles per hour. At 10 miles per hour its tractive effort is 82,500 pounds.

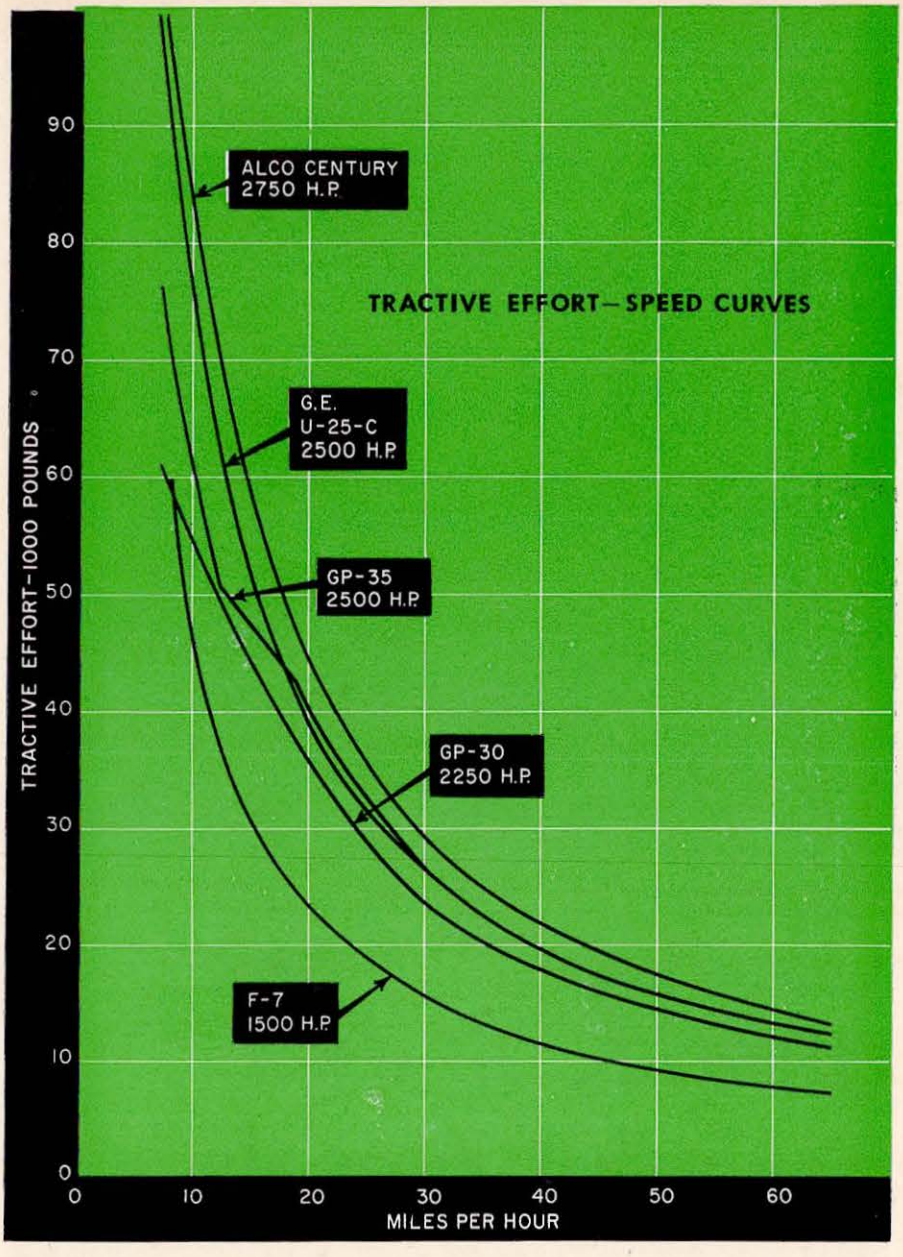
With the added weight and axles the six-axle units could be expected to deliver about one-third more tractive effort or drawbar pull than a four-axle design of comparable horsepower. For example, the four-axle, 2,500-hp GP35 produces a 52,000-pound tractive effort at 12 miles per hour. The six-axle SD-35 units are expected to be comparable in tractive effort and adhesion to the U25C and Century 628 locomotives.

The six-axle units already in service operate between Jacksonville, Fla., Waycross, Ga. and Montgomery, Ala. On this 375-mile run ruling grades become heavier as the rails progress westward.

What the six-axle diesel locomotives will haul and how they compare with both the new four-axle locomotives and older power is shown in the accompanying table. The table shows maximum tonnage ratings for the Waycross Division between Waycross and Montgomery for five locomotives. Tractive effort-speed curves for the same five models show why the tonnage ratings of each design are different.

Initially, ACL operated two of the six-axle units, with an older 1,500-horsepower unit, as a three-unit locomotive replacing five 1,500-horsepower units formerly used for the same assignment. However, as seasonal traffic increased, three of the six-axle units were placed together, replacing six of the older four-axle units. Performance of the new power is excellent.

● **More units ordered.** ACL's confidence in the performance of the six-axle locomotives was demonstrated last month when it ordered 21 more at a cost of about $5 million. The order, scheduled for delivery late this year, included seven Alco 628, seven GM SD-35, and seven GE U25C units. ■



Tractive effort-speed curves of five ACL locomotives show why tonnage ratings of the six-axle models are higher in the road's western territory where grades are 0.75% or more. Tractive effort of this type of motive power is substantially greater than that of four-axle locomotives in the lower speed ranges.

TONNAGE RATING: A COMPARISON

From	To	F-7 4-Axle 1,500-Hp	GP-30 4-Axle 2,250-Hp	GP-35 4-Axle 2,500-Hp	U25C 6-Axle 2,500-Hp	Century 628 6-Axle 2,750-Hp
Waycross	DuPont	3800	4750	4900	6000	6000
DuPont	Valdosta	2700	3250	3600	4800	4950
Valdosta	Thomasville	2200	2650	2950	3900	4000
Thomasville	Bainbridge	2000	2400	2650	3550	3650
Bainbridge	Dothan	1650	1950	2200	2900	3000
Dothan	Montgomery	1450	1750	1900	2550	2650

Span bolsters on top of the pairs of four-axle trucks support the underframe of the 550,000-pound unit. Alco has built two cab-type units and one cabless booster.

NEW MOTIVE POWER—2

UP gets 'most powerful' diesels

Units with 5,500-horsepower ratings are to be operated in multiple as a 16,500-horsepower locomotive which will be assigned to the handling of high-speed, through freights.

The most powerful diesel-electric units ever built are being delivered to the Union Pacific by Alco Products. The three units, with individual ratings of 5,500 horsepower, are to be operated in multiple as a 16,500-horsepower locomotive. They are designated by Alco as its Century 855 models.

"The Century 855 has more than double the power of the conventional single-engine diesels that are in operation on American railroads," W. A. Callison, Alco senior vice president, said last week. "This is in keeping with today's trend to more powerful units, a trend that provided the stimulus for Alco's development of a 2,750-horsepower diesel engine."

• **For long-haul traffic.** In announcing the Century 855 order a year ago (RA, June 17, 1963, p. 48), A. E. Stoddard, UP president, said that studies of his road's through-freight services had shown the need for locomotives of 15,000 horsepower, or more, to assure on-time handling of its long-haul traffic. At that time, along with the big Alcos, UP also ordered General Electric 5,000-horsepower units which are now in service.

To achieve such high horsepower ratings, both builders have installed pairs of their largest diesel engines in each unit. For Alco, this means the 2,750-horsepower 251-C engine, the same prime mover used on Century 628 units first delivered to the Atlantic Coast Line several months ago (RA, Jan. 27, 1964, p. 44). Century 628 locomotives have since been built for the Monon, the Delaware & Hudson, and the Louisville & Nashville.

From the Century 628, described as "the most powerful single-engine diesel ever built in the U.S.," Alco has gone on to produce the Century 855 which it calls "the largest and most powerful diesel-electric locomotive ever built, anywhere."

Actually, there are two versions of the Century 855: an A unit with operator's cab, and a cabless B unit. Two 855A's and one 855B make up the UP's three unit, 16,500-horsepower locomotive.

• **Power for each axle.** Each unit is carried on four four-wheel trucks, mounted in pairs under span bolsters at each end. All axles are powered—eight traction motors per unit.

The span bolster arrangement was first utilized by the Union Pacific on the 4,500-horsepower gas-turbine electrics put into service over ten years ago. They, like the new twin-engine diesels, delivered their power through a motor on each of the eight axles. The Century 855 has an average loading of 68,750 pounds per axle.

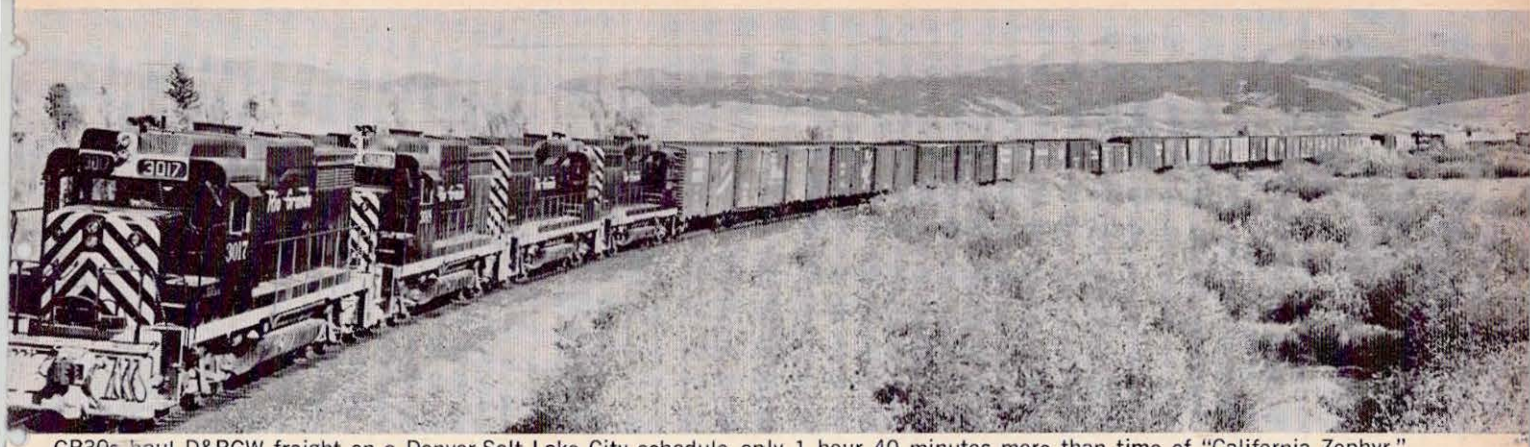
The 251C engines on each unit are mounted with their generators toward the ends of the unit, putting superchargers, water and oil pumps and other auxiliaries near the center of the carbody. Between the two engines are mounted the twin banks of radiators with their cooling fans.

The 251C diesel engine is a 16-cylinder, four-cycle, supercharged model which operates at 1,050 revolutions per minute. Bore is 9 inches and stroke is 10½ inches. The engine is equipped with the Alco Model 800 turbo-supercharger used in conjunction with a single-pipe, stainless-steel, exhaust manifold and an aftercooler having its own radiator system.

• **Huge fuel tank.** Each engine, coupled to a standard traction generator, powers the four motors on the trucks under that end of the unit. The locomotive underframe is an all-welded assembly in which is incorporated the 6,000-gallon fuel tank.

Maximum speed of the UP Century 855 is 70 miles per hour with its 74/18 gearing. Alco does, however, offer, as alternates, two other gear ratios which would permit top speeds of 80 and 86 miles per hour. Peak dynamic braking effort is 86,000 pounds.

Each unit is 86 feet long between coupler pulling faces. Over-all height is 16 feet 4¾ inches. The multiple-unit locomotive is designed to negotiate a 21-degree curve. Fully loaded, each unit weighs 550,000 pounds. ■



GP30s haul D&RGW freight on a Denver-Salt Lake City schedule only 1 hour 40 minutes more than time of "California Zephyr."

NEW MOTIVE POWER—3

Why the D&RGW likes its GP30s

Train speeds are up 6.7% and repair costs down some 70%.

Electro-Motive GP30 diesel-electric units are saving the Denver & Rio Grande Western almost $600,000 a year in maintenance costs. The road's 28 GP30 units were delivered in 1962 and 1963. D&RGW's total locomotive maintenance costs in 1963 were $2,732,000, compared with $3,330,000 in 1961.

• **New operating standards.** The 2,250-hp GP30 units also have established new D&RGW performance standards. They handle 41.7% of the gross freight ton-miles racked up by the road's total fleet of 144 freight locomotive units.

During an eight-month study period in 1963, the GP30 units maintained a monthly mileage average exceeding 13,000 miles. That compares with a monthly average of 7,306 miles for the road's F7 units, 5,702 for its GP9 units, and 5,356 for its FT units. Ten 2,500-hp GP35 units, now being delivered, will augment the GP30s in handling high-speed, preferred freight between major terminals on the D&RGW mainline.

• **Fast freight.** One D&RGW scheduled freight train, the ACD, operates on a 15-hour schedule between Denver, Colo., and Salt Lake City, Utah. This compares with a running time of 13 hours, 20 minutes for the line's transcontinental "California Zephyr." Four GP30 units have been handling the 3,000-ton consists of the ACD, hauling 750 tons per unit. To make the same time, an F7 unit can handle only 465 tons.

A report covering 1963 operations released by the D&RGW shows how the GP30 units have expedited freight schedules to meet present-day competition. The accompanying table, which compares statistics for the years 1963 and 1961, shows the substantial increase in train speed achieved without sacrificing train load.

• **Repair costs compared.** Thirteen of the GP30 units were delivered to the D&RGW in April and May 1962. A second group of 15 GP30s was delivered in February 1963. Repair costs on the GP30 units averaged 4.65 cents per unit mile in the first eight months of 1963. That compared with average repair costs of more than 14 cents per unit mile for the 116 F7 and GP9 units.

During 1963, monthly repair costs on the GP30 units averaged $642 a unit, or 4.6 cents per unit mile. Monthly repair costs on the F7 units (delivered in 1948-52), averaged $1,053 per unit, or 14.4 cents a unit mile. For the GP9 units (delivered in 1955-56), monthly repair costs averaged $956 per unit, or 16.78 cents per unit mile.

On the basis of a sampling of 111,441,114 main line freight gross ton-miles, the 28 GP30 units handled 41.7% averaging 1,659,707 gtm per unit. The 116 F7 and GP9 units hauled 58.3%, averaging 560,080 gtm per unit. In other words, locomotive units accounting for 54% of total maintenance costs, the F7s and GP9s, are handling 58% of the mainline gross ton-miles. The GP30 units, accounting for only 7% of the maintenance costs, are handling 41.7% of the mainline gross ton-miles.

• **Power assignments.** Since purchasing the GP30 units, the D&RGW has altered its maintenance procedures and varied its power assignments to obtain additional indirect savings on the balance of the motive-power fleet. Programmed maintenance was stopped in September 1961 on all FT units (which were delivered in 1942-44). Twenty-eight units were turned in to EMD in conjunction with the GP30 replacement program. The remaining 16 FT freight units have since been assigned primarily to helper service. Nine are at Minturn, Colo., three at Tabernash, Colo., and four are in the Thistle-Helper, Utah, area.

Periods between engine overhaul have been lengthened by the D&RGW because the older units are handling far less traffic in gross ton-miles per freight-train hour. The engine-overhaul cycle on the 10-to-14-year-old F7 units has been extended from three to four years. The bigger workload handled by the GP30 units permits assignment of GP7 units to yard service to replace older, higher-operating-cost switch engines. ■

NEW POWER RAISES OPERATING STANDARDS

Year	Train load	Train speed	Gross ton-miles per train hour	Train miles	Gross ton-miles
1961....	3,500	20.9	73,036	3,254,000	11,390,323,000
1963....	3,481	22.3	77,443	3,332,876	11,600,092,000
% change	−0.1	+6.7	+6.0	+2.4	+1.8

L&N

Car supply: The crisis fades

A growing fleet and better car utilization are two factors that should help end critical car shortages.

The big push this year is for more freight cars—used far more efficiently than ever before. And, as of mid-1964, the combination of money, manpower and machines—all of them used judiciously—is finally giving railroads a leg up on the perennial car-supply problem.

Money—available in some quantity, at last, in 1963 and '64—is making possible freight-car-acquisition programs which could bring orders for close to 100,000 new units this year.

Manpower and machines—working in tandem—are making it possible for many railroads to get far greater utilization out of a given number of cars.

● **The fourth 'm.'** To these three "m's" might be added a fourth—marketing—because some railroad men are becoming more and more convinced that recurring car shortages can be traced, to a significant degree, to faulty or outmoded marketing practices.

Last year saw two car shortages ranking with the worst in history. But it's already pretty clear that there will be no repeat performance in '64. There will be, as always, spot shortages—but nothing like the near disasters of spring and autumn 1963. Too many factors, now, are working in the carriers' (and shippers') favor.

Money is the most obvious contributor to the improvement. Railroads ordered more than 60,000 freight cars last year. With an ordering spurt late in '64, they could hit the 100,000 mark this year. Carbuilders, faced now with a feast instead of a famine (for a change), find their plants going all out, across the board. Pullman-Standard's building shops have been humming. So have American Car & Foundry Division's, General American's, Bethlehem Steel's. Other builders—Thrall, Greenville, Ortner, Magor, among them—have shared in the order boom (particularly for such items as auto-parts and unit-train cars).

● **Pickup in the East.** Particularly significant in '64 are the vastly expanded capital-outlay programs of eastern roads. Long regarded as poor relations—or worse—by their western cousins, the East's major carriers this year are coming up with the money (in large bundles of large-denomination bills) to finance capital-spending programs which will cost more than $310.3 million, an 86% increase from '63 totals.

Western, southern and Pocahontas-region roads aren't being outdone. They're spending, together, about $961.5 million. The biggest single chunk of these funds will go for new freight cars. And the result of all this spending will be a car fleet of greater specialization and, at the same time, greater usefulness than anything shippers and receivers have worked with in years.

A number of surveyors of the railroad scene have expressed concern at the trend toward specialization — on grounds, mainly, that specialization benefits only a few big shippers, that the little fellow or the fellow who needs just an average serviceable car is the forgotten man. Railroad men think differently. Traffic and marketing people (and carbuilders, who have played no minor role in this business of suiting the equipment to the demands of the service) can point to a number of factors tending to create an improvement in car supply, generally.

● **Boom in the car shops.** Over the past year and a half, they note, many railroads have launched extensive car-rebuilding programs—involving, mostly, standard-type cars. Moreover, changes in shipping patterns and practices—the increased use of high-capacity covered hoppers for grain, for example—have brought on the release of high-grade box cars for other service. Piggyback's growth has given a similar result. So has the automobile industry's conversion to 60- and 90-foot parts cars.

Most important, the money being spent today is buying cars of better quality, over-all, than were ever available before. It's a matter of suiting the car to the job—and of building or buying under depreciation rules which are more realistic than those in force before 1962. It's also a matter of taking advantage of increasing carbuilder knowhow—and carbuilders, like most other people in business to make a profit, keep getting smarter, keep pushing research and development work more, year after year.

The mating of car to job is perhaps nowhere better illustrated than in three specifics—auto-parts cars, unit-train hoppers and elongated- or trough-hatch covered hoppers.

● **Everything fits.** These three types work in what might be termed the ideal match—rates, service, equipment. In each case, there's the element of the incentive rate for heavier loading. In at least two instances, there's a real expedited service. And in all cases there's equipment built especially for the job at hand.

Money, however, is a fleeting thing. Railroads (like the carbuilders) are used to peak followed by valley. But this time around, the carriers could be coming into a longer-than-usual period of relative prosperity. As a result, new-car installations may stay at current high levels. One of these years, they could equal old-car retirements (a factor with lessening significance, in view of increasing per-car capacity).

In the long run, the combine of manpower-machines-marketing may equal or surpass the power of money alone

◀ Center Flow HC cars of 4,650-cubic-foot capacity, being built for L&N by American Car & Foundry, will usually be handling grain and grain products at bulk rates.

in improving car supply—by improving car utilization.

● **What utilization means:** More and more roads are starting to look at utilization as something that starts when the order is placed—and continues without a letup in effort until the car is scrapped.

Frisco President L. W. Menk puts it this way:

"Can you visualize an automobile manufacturer buying a tool that would be in effective use about one day in six? Of course not—yet this is something our industry had not only tolerated but even condoned in the use of freight equipment.

"I have a deep suspicion that perhaps one of our present troubles is not so much availability as it is utilization. . . .

"Where does proper utilization start? I think it starts in construction of the new freight car. The application of better appliances and paint in the construction of a new freight car renders it less liable to damage, eliminates many minor repairs, enables it to run a much longer period of time before major repairs are necessary—and thereby brings much greater utilization of an expensive piece of equipment. These better appliances will probably cost us a few extra dollars, but they certainly pay dividends in the long run.

● **'Keep it moving.'** "Equipment must be kept on the move. I think we have the duty of being cognizant of the importance of keeping cars, specialized cars in particular, in constant service. Freight cars are the bread and butter of every employee on the railroad, and better utilization of equipment will bring about a healthier railroad industry. A healthy industry will eventually mean lower rates for freight—and, thus, more of it.

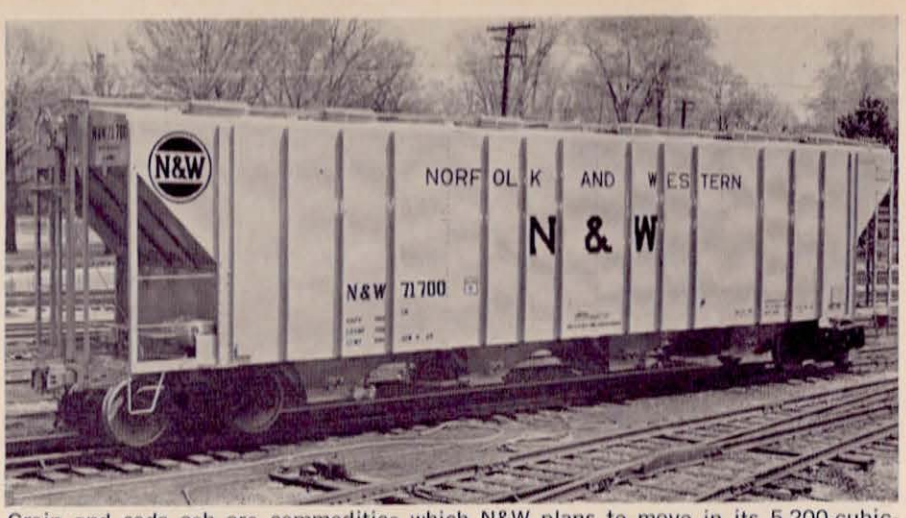
"Utilization, then, is the key to profits. If the railroads can achieve a high level of utilization, a high level of profit will follow."

Rolling-stock dividend

Frisco's president is far from alone in his emphasis on boosting profits through better car utilization and on getting the most return from high-priced rolling stock. This is Southern's president, D. W. Brosnan, talking:

"The railroad industry generally has tended to regard the freight car only as something in which to move a customer's goods in a manner that imposes the least burden upon the running of the railroad—and we have almost totally ignored the freight car in its at least equally important character as a capital investment."

● **New system a-building.** Southern



Grain and soda ash are commodities which N&W plans to move in its 5,200-cubic-foot, 100-ton cars. Ortner built the bodies principally of low-alloy, high-tensile steels.

Rapid loading and unloading were achieved by General American when it produced 4,500-cubic-foot trough-hatch car with oversize discharge gates.

Utilization is something that starts

—along with a number of other major roads—is moving in a big way to improve car control and utilization. Before the end of this year, the railway will have in operation what's described as "one of the largest real-time data systems and computer complexes in the railroad industry."

Southern says its system "will encompass vital information as to the location, predictive availability and optimum assignment of freight cars and diesel locomotives. The system requires extensive use of microwave communications, high-speed data transmission and the latest computing equipment. When completed, it will bring substantial benefit in the form of improved services for shippers and enhance management's ability to efficiently control costs."

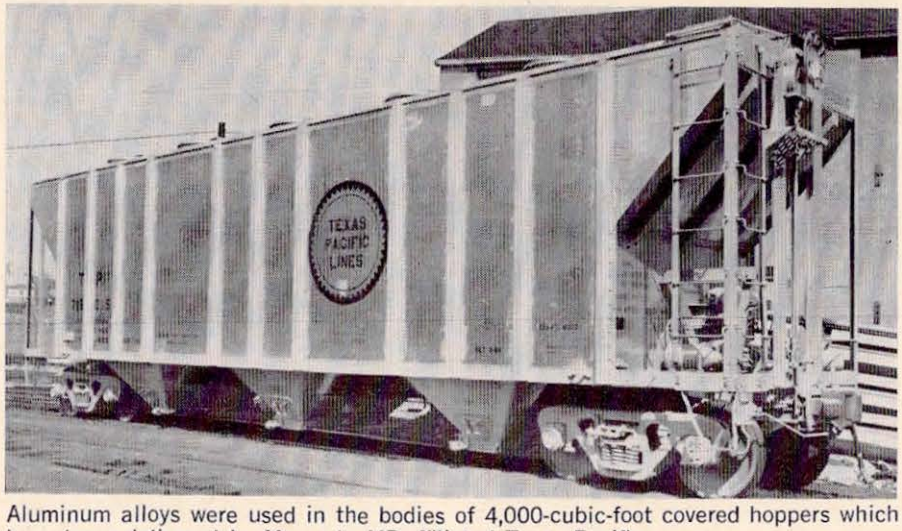
How much payoff is there in increased utilization? One major midwestern road is finding out, and in a hurry. A new, improved car-control program was put into effect earlier this year, covering several thousand specialized cars. The cost of the control system, per month, is about $5,000. The improvement in average loads per car, per month, 1964 compared to 1963, is edging toward 100%. And the cars are producing, in '64, about $250,000 more net per month than they contributed last year. For obvious reasons, thousands more cars are going to be put under the control system in the months ahead.

● **'Move the empties.'** One of the new elements injected into the car-control process by the growth of the special-car fleet is the emphasis on efficient and expedited movement of empty cars—and this is spotlighting what some regard as a definite communications problem.

John Griffin, Southern Pacific's general superintendent-transportation, outlines the problem this way:

"Historically, our operating em-

One-piece covers on Pullman-Standard's earlier trough-hatch covered hoppers have been supplanted by sectionalized covers on cars now being built.



Aluminum alloys were used in the bodies of 4,000-cubic-foot covered hoppers which have been delivered by Magor to MP-affiliated Texas Pacific.

at the time the car order is placed

ployees have had the same opinion of empty freight-car equipment as the engineer who lost his paycheck in a poker game and told his wife that he wasn't paid for that half of the month because all he hauled was empty cars. . . . However, today, with the increasing demands for specialized equipment and the steadily rising costs, in the over-all handling of empty equipment we are not talking about cars that can be purchased for $5,000 or $6,000 but cars that are ranging in price from $15,000 to $35,000.

"Those of us who recommend the acquisition of new equipment, based on an analysis of shippers' requirements as well as for solicitation purposes, ultimately see the purchase orders and are fully aware of these costs for new equipment. On the other hand, this same information obviously is not filtering down to the level of the personnel charged with handling the equipment.

- **The communication lag.** "This is a problem of communications as well as of education. The sooner we are able to open up these lines of communication to the extent that the people in the field doing the work consider empty freight equipment as important as perishable or manifest loads—not only in handling to and from industries and cleaning tracks but also through terminals and over the road—the sooner we will have implemented one of the most advanced techniques in car control."

Less well defined as a factor in improving car supply— thus far—is the marketing aspect. But some observers are pointing to the unit-train concept as the ideal evidence of how carrier-shipper-receiver cooperation and coordination can bring more usefulness out of a given number of cars. And they're projecting this to other applications.

- **How does marketing fit in?** A top officer of a major eastern road recently lashed out at "improper marketing" as a factor in freight-car shortages—and cited two examples, one eastern, one western. In the East, he noted, export coal sometimes stayed in hopper cars at ports for as long as four months—with obvious results to hopper-car utilization. As for the western situation: "We must find different ways to market grain—or the West will always have car shortages." This was an easterner talking—but his comments in many ways mirrored those of westerners baffled by the logic which not infrequently has brought a rush on movement of Commodity Credit Corp. grain at about the same time the new harvest starts.

Steadying the flow

Even if this particular problem were to be solved, however, there's no doubt that the basic problem would still exist in the West, particularly in the Northwest. It's a relatively simple one: More cars are loaded for movement off-line than are received for on-line unloading. This means that a steady flow of empties must come on-line—and one western complaint is that the flow isn't at all steady.

- **Per-diem's effect:** It's too early to tell for sure whether the graduated scale of per-diem rates—supported by most western carriers—will give the hoped-for long-run help not only in encouraging roads to buy and build new equipment but also in prompting faster car movements. New demurrage rates —now scheduled to become effective July 1—should also help improve car supply by encouraging improved utilization. But that, too, remains to be proved.

Observers aren't sure how big a part the new per-diem scale has played in the 1964 increase in car orders—but it has, apparently, led to step-ups in rebuilding and upgrading programs (to the extent that such a program has been a big factor in one major western road's going from debt to credit per-diem status). The new demurrage rates should certainly encourage shippers and receivers to correct whatever faults they've allowed to develop. The existing two days' free time for loading or unloading remains unchanged–but the penalties for delay beyond two days are going up. Now, an industry is charged $4 per car per day for the first four chargeable days and $8 per day after that. But, after July 1, the rate will go to $5 per car per day for the first four chargeable days, $10 per day for the next four days and $15 per day for each day above eight.

- **The legislative push.** These rate changes, however, haven't stopped wes-

tern lines from pressing for legislation giving the Interstate Commerce Commission power to fix higher per-diem rates—by taking into account ownership costs and expenses. Such a bill cleared the Senate Commerce Committee less than two weeks ago, with substantial support from government agencies. Similar proposals, though, have gone through the Senate before, only to die in the House.

The ICC itself supports legislation which would give it an "incentive" per-diem power. Statements from the Commission this year indicate relatively little confidence in the new per-diem scale's ability to improve car supply—and, as railroads are well aware, the ICC has its own investigation of car supply and distribution under way.

● **GN: Optimistic now.** One of the industry's most consistent advocates of measures aimed at improving car supply has been Great Northern President John M. Budd. He sums up the current situation this way:

"Car supply has been satisfactory thus far in 1964 in GN territory and in the Northwest, with the possible exception of flat cars.

"Harvest is under way in the Southwest, but to date we in the Northwest have experienced no shortage of grain cars as sometimes occurs at this time of the year. The crop in the Southwest has been damaged to some extent by weather conditions and there seems to be a lesser movement out of that territory as compared with other years.

"We are optimistic about the supply of cars for the next few months, including the early part of the harvest period in our territory. Several factors are involved. Cars seem to be turning faster, possibly because of ICC orders requiring prompt movement. Additional facilities recently installed for cleaning and conditioning and making running repairs to cars seem to be helping. And there has been an excellent record of new car installations, with 22,000 reported placed in service during the first quarter of 1964."

● **Scale still too low?** This degree of optimism, however, doesn't lessen Mr. Budd's conviction that more needs to be done to encourage car buying and building. As he told the ICC earlier this year, the new per-diem scale is still "too low for the higher-value brackets." By the Commission's own study, he pointed out, the present six rates are lower in every bracket than total per-diem costs based on reproduction costs and lower in all but the two bottom brackets than per-diem costs based on original car cost.

As GN's president sees it, several factors are responsible for development of the new per-diem scale.

High-cube hoppers, such as Bethlehem-built ACL cars, make paying proposition of hauling low-density wood chips.

—Until World War II, types of cars were fairly standard. Cost of acquisition did not vary significantly from car to car, and an average single rate tended to be effective and fair compensation. But over the last 10 to 20 years, the emphasis on specialized equipment has upset the old balance. GN's own 1964 capital budget, for example, calls for purchase of cars ranging in price from $12,320 to almost $21,000.

—The single-rate per-diem rate was calculated from the average cost for all interchange cars. An owner would be reimbursed on an equalized basis if his cars which were off-line averaged the same as the national fleet in value. But, says Mr. Budd, the single-rate system wasn't working that way: "Under the old system a typical car-owning line found that the older cars in its fleet were on-line and its newer, more valuable cars tended to stay off-line for considerable periods — in fact, for months at a time."

● **New cars popular—off-line.** GN's studies on the latter point, he declares, showed that a series of 50-foot, wide-door box cars built in 1961-62 was off-line 85% of the time—and that a series of similar cars built in 1929 was off-line only 59% of the time. Great Northern, Mr. Budd notes, also owns about 2,500 nearly-new plug-door box cars:

"These cars normally are on-line in numbers equal to but 17% to 35% of GN ownership. By contrast, older types of equipment of foreign and system ownership were on-line to a much greater extent, indicating that a railroad does not necessarily receive a foreign car equal in age and value to one of its own sent off-line."

How does GN's president regard the graduated per-diem scale? "There are few who claim perfection for it. Most support it as a reasonable first step in departing from the outmoded single-rate system. My own view is that the new rates are still very low in relation to what is paid for rental of other assets and when measured by the value of what is being used, if not ownership costs as well. Improvements in the rates will no doubt be suggested as the fleet is gradually upgraded as the result of incentives furnished by the plan."

● **'Demurrage' for carriers, too?** As for the improvements in utilization which demurrage-charge changes are likely to bring, there are some in the industry who think the shoe should be put on both feet, not just on one. Shortly before the AAR announced the increase in demurrage charges, Frisco President Menk had this to say:

"We in the railroad industry have complained long and loud about car detention on the part of the shipper, and we have clamored for changing car demurrage rules and charges. These changes may improve car mileage—but perhaps we should examine our practices to determine whether a modification in operating procedures could speed up our own handling before we penalize the customer with higher costs.

"I have heard it suggested that railroads, too, should be penalized for running late trains, and perhaps this should be. Railroads have an obligation to deliver at a certain time, just as the shipper has an obligation to load and the receiver to unload at the proper time."

● **Critics still talking.** This is some of the opinion darting about the industry, as of mid-1964. So far as fact—statistical-type fact—goes, critics are still in the saddle (though they're risking saddle-sores, if railroad spending and car-utilization programs pay off the way they promise to now).

It's true that freight-car retirements are still topping freight-car installations (but by a narrowing margin). It's true that the increasing average per-car capacity—up to 56.9 tons in 1963—hasn't kept the car fleet's total freight-carrying capacity from dropping (though total capacity last year was only about 4% under the total capacity of the World War II fleet of 20 years ago).

Auto parts cars, being built by Thrall, have 10,000-cubic-foot bodies for Ford service. Thrall has orders for over 500 of these high-cube models; Greenville has just started on 400 more.

On the plus side are improving indices of actual performance—indicating better utilization coming out of the thousands of dollars invested in car-control systems (and the millions which have gone into more powerful locomotives, improved roadway, new yards, improved signaling and communications systems and, lest anybody forget, more useful freight-car equipment).

● **For second-half 1964:** To sum it all up, the outlook on '64 car supply is this:

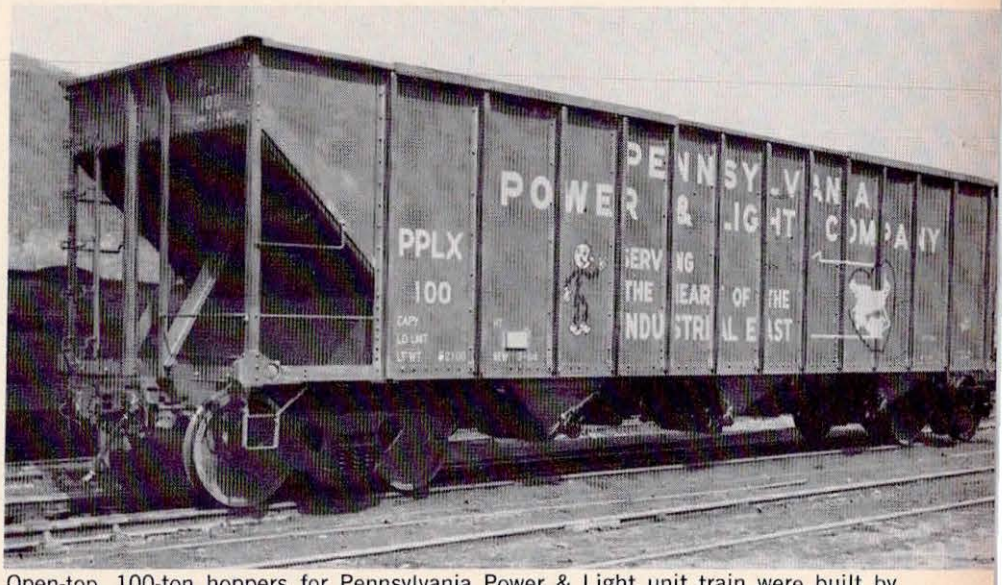
—Freight-car orders this year will come close to 100,000, may hit the six-figure mark (last month alone put more than 8,000 carbuilder and company-shop orders on the books).

— There will be car shortages—but they'll be spot situations, nothing like the large-scale shortage of last year.

— Money invested in car-control programs will improve utilization, improve service, improve car supply—and make a contribution to net far outweighing the cost of the programs themselves.

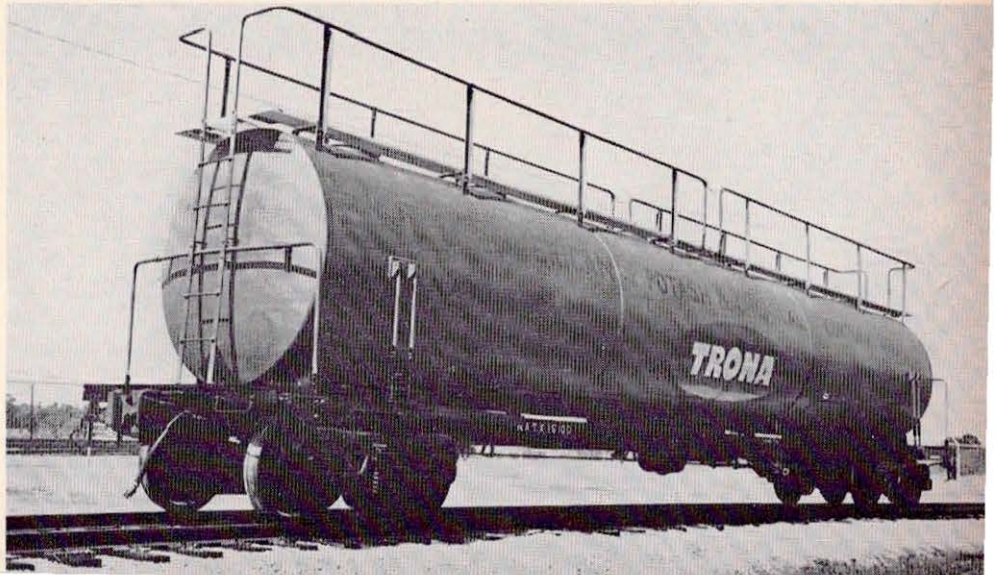
— The trend toward specialization in freight-car equipment will continue—and nobody will really be hurt by it. A half-dozen factors—not the least of them the big changeover in auto-parts cars, the big switch to covered hoppers for grain, the many car-upgrading programs—should stabilize or even bring an actual increase in the availability of general-service box-car equipment.

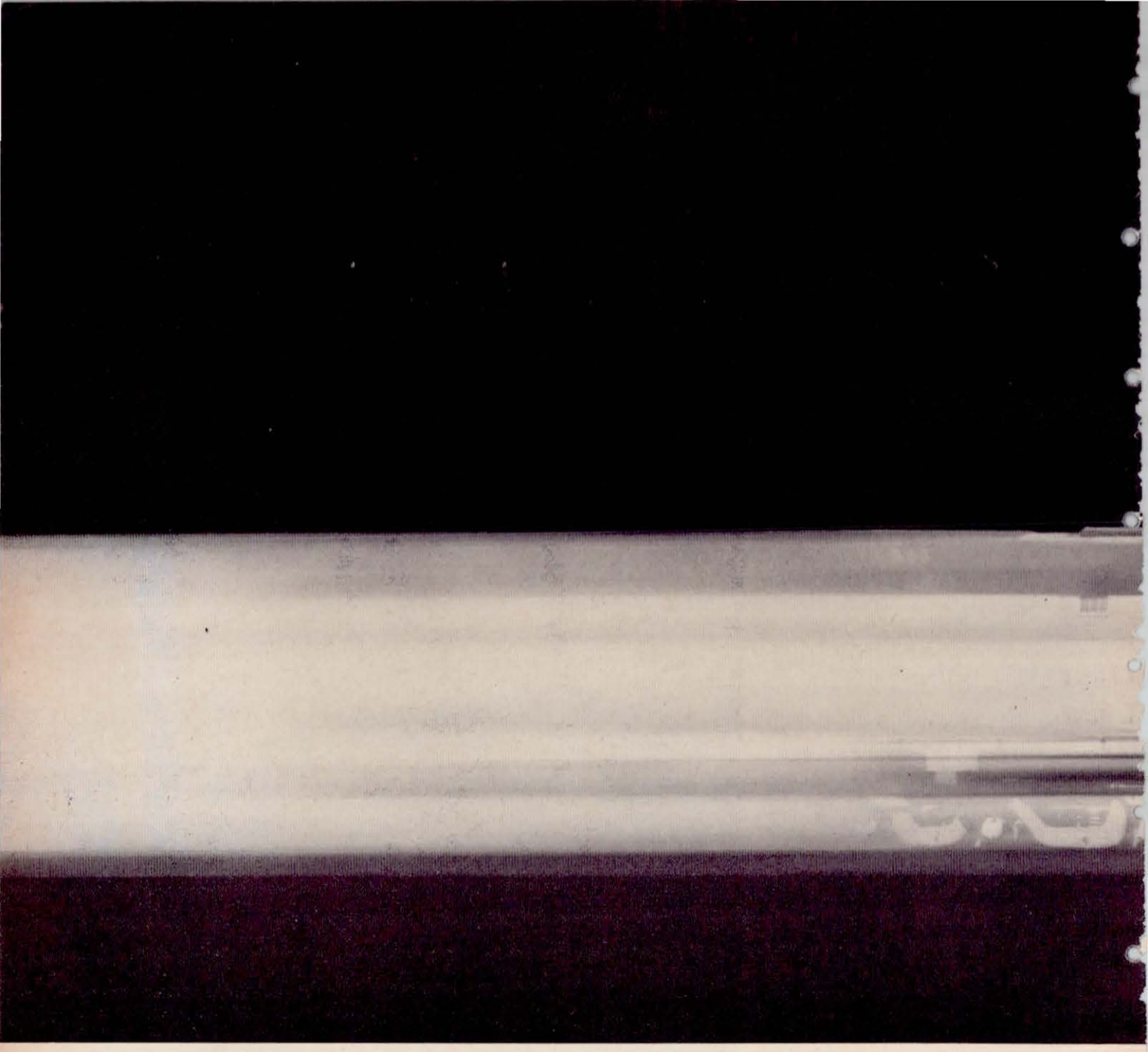
And 1965 could well begin with the railroad car fleet in better shape, quantitatively and qualitatively, than it's been for years and years. ■



Open-top, 100-ton hoppers for Pennsylvania Power & Light unit train were built by Bethlehem. The 70-car train made its first revenue trip over PRR last week.

Sodium chlorate from American Potash & Chemical will move in 18,000-gallon Tenelon stainless steel tank car recently completed by North American.





The Delaware & Hudson, in its continuing program of improving its service, bought nine ALCO Century 628's. Traded in 12 old road switchers. And retired 13 aging yard switchers.

Nine 2750 hp locomotives in place of the 12 old 1500 hp units traded in. 24,750 gross hp in place of 18,000. A total reduction of 16 locomotives.

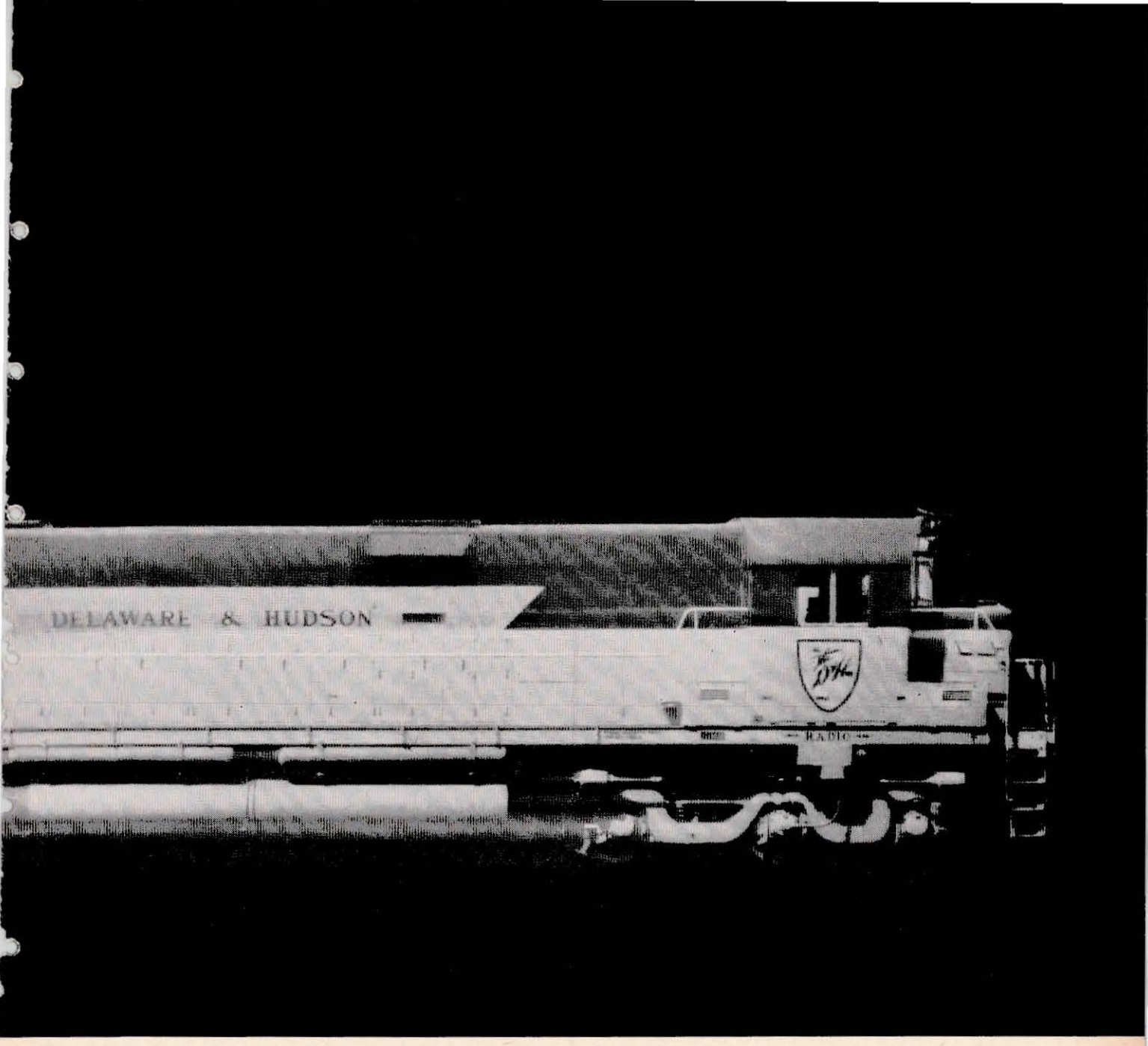
That's expansion.

With ALCO's new Century 628's. Now hauling heavier freight loads for D & H over mountainous terrain. With fewer fueling stops. And substantial operating and maintenance economies to come.

Century 628. America's most powerful single-engine diesel electric locomotive. Driven by an ALCO 251-C, an improved version of the world-famed ALCO 251 16-cylinder diesel engine. With 6 traction motors.

And the Century 628 doesn't just promise. It delivers. Fuel savings—the lowest parasitic load per hp of any locomotive.

It features sealed electric control compartments. Most modern and complete static control system in service. Improved temperature control system. New air-handling system. Most efficient automatic wheel slip-control in the business, combined with better over-all



Now the D&H provides better customer service... gets an average of 60% more unit mileage per month/per road locomotive. Because they cashed in on ALCO's New-Power Program.

weight distribution, reduces wear on wheels and brake shoes.

It's also the first locomotive that can be equipped with steam generator and dynamic brake while retaining a low front hood. Plus new removable radiator and engine hoods. New hinged engine compartment doors for fast access to all power equipment. Walk-in access to the main generator. All designed to cut maintenance costs and downtime.

It all adds up to something big. More power. Lower operating costs. More ton-miles capacity. Greater profit for the D & H...and for you with Alco Century.

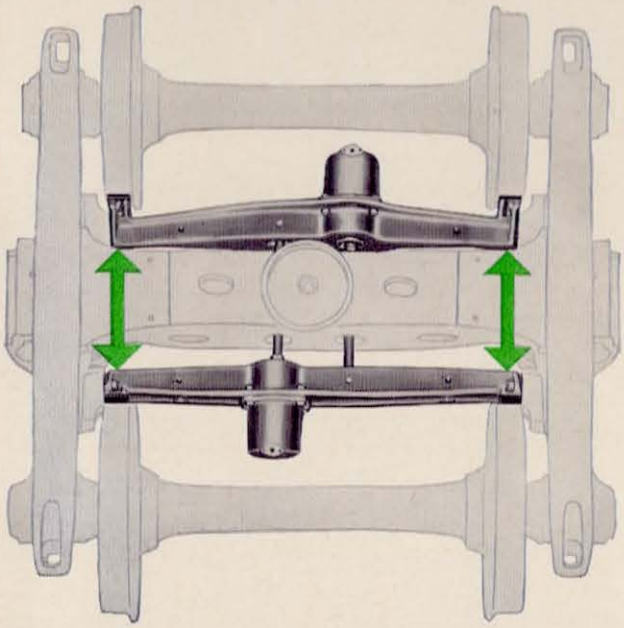
Ask your Alco man for the complete Century locomotive story: Century 855 ...5500 hp; Century 628...2750 hp; Century 424...2400 hp; Century 420... 2000 hp. America's first full-range series of modern motive power.

ALCO

ALCO PRODUCTS, INC., 530 FIFTH AVENUE NEW YORK, N.Y., 10036

WABCOPAC® BRAKE ASSEMBLY lowers transportation costs . . .

by increasing braking efficiency



The WABCOPAC Brake Assembly is more efficient than conventional brake rigging because of direct application of brake cylinder force to brake shoes. The WABCOPAC Brake Assembly is 80-85% efficient as compared to conventional rigging efficiency of 50-65%. The force delivered at the different shoe locations on a given car varies only 10% with WABCOPAC Brake Assembly, whereas this variation with conventional rigging is generally 40%.

The hand brake with WABCOPAC Brake Assembly is more effective for the important condition—the loaded car. Due to the characteristics of the COBRA* Shoe, hand brakes are required on only one truck. By doubling the shoe force on one truck, better hand brake holding power is obtained over that now available with cars equipped with conventional rigging and metal shoes.

*Registered trademark of Railroad Friction Products Corporation

WABCO

WESTINGHOUSE AIR BRAKE DIVISION

WILMERDING, PA. / Westinghouse Air Brake Company

LYNE

COMPUTERIZED TARIFFS?—A friend of mine—who has been following rather closely the things that are being said, and written, about simplifying freight tariffs by putting them on computer tapes—believes the advocates may be running into a "communications" problem. That is (he says), he is now finding it more difficult to understand what the computerizers are driving at than he does to understand the printed tariffs, which are mystifying to many people.

One type of confusion (unless the computerizers simplify and clarify their language), he feels, may be cleared up only at the expense of taking on another complexity—equally beyond the comprehension of laymen.

In a recent speech at Denver, President Kirk of Columbia University, observed that "the first responsibility of an educated man is to endeavor to achieve clarity and precision in his spoken and written communication."

I don't pass judgment on this computerized rate question. I merely raise it. The computerizers have a potentially highly valuable project on their hands. It seems reasonable to believe that they will succeed with it to the degree that they can arouse the interest and support of non-experts.

NOW HE TELLS US—R. J. Burnside, St. Lawrence Seaway's director of operations, has been apologizing recently for the low level of the water in the Seaway. He said candidly: "The Seaway's chief drawback seems to me to be that it was grossly oversold and its program suffers from comparison with the rosy forecasts so zealously touted by some of its promoters. It was to be the panacea of all ills, and reality comes like a shower of cold water, cooling ardor and dampening fond hopes for Utopia."

Too bad some psychiatrists don't have a chance to examine proponents of such projects before they go too far—and discover their real motives. Possibly their real urge may have little connection with transportation. Heavy federal expenditures in a politician's constituency do not hurt the candidate at the polls. Since the Pharaohs built the pyramids, it has seldom been the usefulness of public works which has been the deciding factor in their favor.

100 YEARS OF RAILWAY MAIL—W. L. Fergus of the Glen Ellyn Philatelic Club, 166 Forest Avenue, Glen Ellyn, Ill., is offering the club's services to stamp collectors in conjunction with cachets to celebrate the centennial of the Railway Mail Service, on next August 28. The post office service was founded 100 years ago by Col. George B. Armstrong—then assistant postmaster at Chicago. He was asked to straighten out a large accumulation of army mail at Cairo, Ill., in that year; and the systematization spread rapidly. On August 28, 1864, the first regular railway mail service began—on the C&NW line between Chicago and Clinton, Iowa.

As much as all of us kick from time to time about our mail service, the fact that it works as well as it does is little short of miraculous. And if you don't believe it, go to some country where the government takes only a casual interest in its mail service. I know of one

such place where visitors are warned to allow at least three weeks for the delivery of a letter in the same city where it is mailed. (And, on the other hand, there are one or two countries where you get local mail delivered, in the city where it is posted, within a matter of a couple hours or so.)

DON'T BLAME THE PHOTOGRAPHER—A letter has come in from a railroader at Fort Worth, accusing us of doctoring a portrait in our "People in the News" pages—to make the subject appear more personable than he is in fact. I am sure the accusation is without foundation. If it were possible to tamper with a picture so as to make a homely countenance less so, my associates would have done something to mollify the visage that appears with this column.

Portrait photographers are skillful people, but the only thing they have to work on is the face God gave the subject. There is no witch in the realm of photography who is going to change a pumpkin into a Cadillac—although there are some caricaturists among them who can work the process in reverse.

COOPERATING WITH COMPETITORS—The Transportation Association of America has let it be known that the AAR and the American Trucking Associations have joined it in asking a Senate appropriations subcommittee to allocate additional funds to the ICC to enforce the law against illegal truck operations. The TAA says:

"Millions of tons of freight are being handled illegally every year and such hauls are diverting potential revenues of at least $500 million a year, and probably well over $1 billion a year, from our regulated carriers."

I have no trouble in believing this estimate—but, even more significant than that, perhaps, is the fact that railroaders and truckers are cooperating to tackle a common problem. It has seemed to me for a long time that legitimate common carrier truckers had a lot of interests in common with the railroads—and that they were kept apart largely because a lot of people have found it amusing or advantageous to stir up trouble by portraying the railroads as monopolistic behemoths, seeking to stifle competition. If there is less of a threat of monopoly in any aspect of American industry today than that presented by the railroads, where would you find it?

CENTENARIAN PENSIONERS—A publication of the Railroad Retirement Board reveals that, at the end of 1963, it had on its rolls 34 annuitants who were 100 years old or more. Of the total, 20 were retired employees and the remainder were aged widows. Ten of the annuitants were originally pensioners of railroad companies (i.e., they retired prior to 1937 when the government first got into the act).

At the end of 1963, these 34 annuitants had received $600,000 in benefits—or almost $18,000 each—while the aggregate payroll taxes paid by the 34 totaled less than $1,400. When you can pay into something and get back 428 times as much as you put in, that's pretty good going. But these pensioners are not living in luxury from their annuities—which are averaging only $106. The oldest of them, 106, was a former passenger car repairer for the North Western, who retired in 1928 after 47 years of service.

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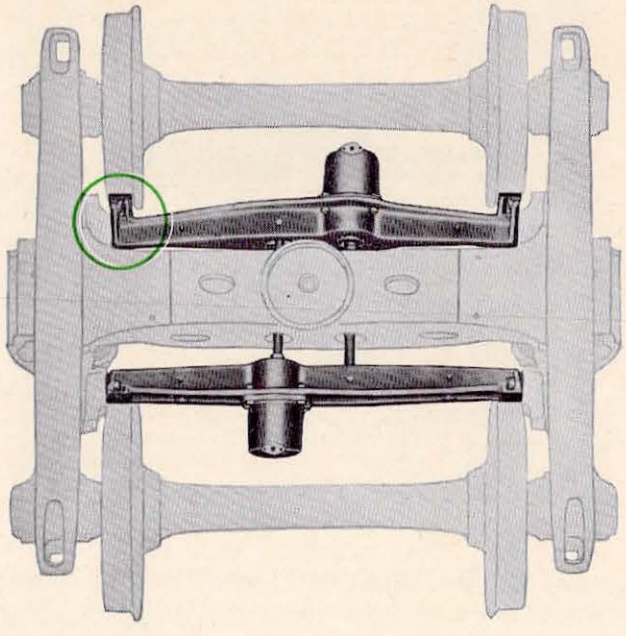
BRAKE ASSEMBLY
lowers transportation costs . . .

by extending
shoe and wheel life



Uniform shoe and wheel wear—the direct action of the brake cylinders in WABCOPAC Brake Assembly provides uniform shoe force on all wheels. This gives shoes and wheels even wear and longer life. Typical wheel profiles taken from single wear wheels after 150,000 miles of service showed that WABCOPAC Brake Assembly equipped with Cobra* Shoes maintained the original flange contour and had light tread wear. Similar wheels with equal mileage, but braked with conventional rigging and cast iron shoes, showed wheel tread wear was doubled and a sharp, vertical flange developed.

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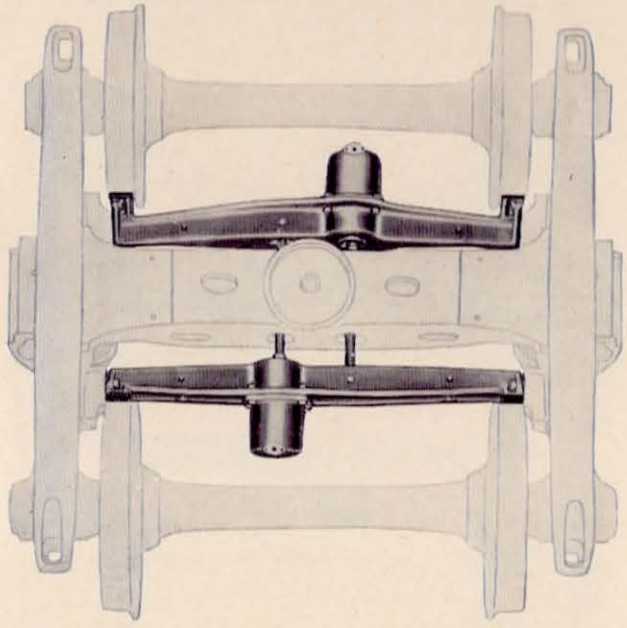
WABCOPAC® BRAKE ASSEMBLY lowers transportation costs . . .

by eliminating conventional rigging



Simplicity of the WABCOPAC Brake Assembly—direct action of brake cylinders eliminates inefficient power transmission which occurs with conventional brake rigging. It delivers the maximum force to the COBRA* Composition Shoes in contact with the wheels. The WABCOPAC Brake Assembly eliminates the following conventional rigging components: body-mounted cylinders, cylinder levers, slack adjuster, support brackets, rods, truck levers and beams.

Savings on original installation

1. Low installation cost
   (Fewer brackets, levers, rods to fabricate and assemble.)
2. No slack adjuster required
3. Single shoe per wheel

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Informing managemen

To be competitive, railway managements must have timely, accurate information with which to make decisions. This was repeatedly stressed by speakers at last week's automated information management seminar. The three-day meeting in Chicago was sponsored by the Railway Systems & Management Association.

● **Automated information management.** Of the many ways to provide timely and accurate information, one is by the use of real time computing. Dr. Louis T. Rader, president of Univac division, Sperry Rand Corp., said that real time computing with its twin components of computers and data communications could provide current, accurate information to railroad managements.

Data storage via disc files, magnetic drums or cores and high-speed computers operating in millionths or billionths of a second combine to provide processing capability to meet today's informational demands. Coupling this computer processing and storage capability to a data communications network (such as microwave) covering an entire railroad, provides a management information system on a real time basis.

Advantages of such a real time computing management information system were listed by Dr. Rader. It would enable railroads to:

(1) improve freight car utilization by as much as 5%.

(2) reduce delays in terminals and yards.

(3) combine operations at larger yards, thereby eliminating small yards.

(4) obtain a more favorable balance of per diem payments.

(5) more accurately schedule maintenance of locomotives and cars.

(6) handle reconsignment and diversion orders promptly and efficiently.

(7) make reductions in hard-core operating costs.

(8) simulate operations enabling management to test plans for changes in procedures; evaluate the effects of changed operations before they are put into practice.

● **Importance of ACI.** The success of real time computing will be the furnishing of accurate input data. Dr. Rader said that automatic car identification will play a key role in this respect, and that such automatic input to a real time computing system will be the basis for a continuing updating of car location information.

The Association of American Railroads has an ad hoc committee making a complete economic study of automatic car identification. Dr. William M. Keller, AAR vice-president-research, also reported to RSMA members that field tests will soon begin of one ACI system on a railroad having a captive car fleet. (Railway Age learned that the road is the DM&IR with about 10,000 ore cars, and the system is Sylvania Electronic's.)

● **Computers are here to stay.** A computer usage survey of Class I railroads (including Canadian) showed that 47 of the railroads have computers. Survey results, reported by Frank H. Coyne, Jr., Southern Pacific's assistant general auditor, also showed that roads with income under $10 million generally do not have computers. Of roads with revenues between $10 and $50 million, about half have computers, and roads

ith computers

with incomes over $50 million almost all have computers. Almost 140 computers are presently installed or on order, Mr. Coyne stated. Roads comprising 90% by revenue of all Class I American railroads today are firmly committed to computers.

He pointed out that the majority of applications are for revenue accounting, equipment movement and payroll distribution, but that several roads have indicated computer usage in the area of car distribution and centralized car control.

In addition to the above-mentioned survey, RSMA members heard further testimony on management acceptance of computers. The Thursday luncheon speaker, L. W. Menk, president, St. Louis-San Francisco, said: "May I remind you once more of the three aspects of this computerization problem which I feel need to be stressed—the need for purposeful simplicity, increased accuracy, and improved internal and external communications?"

● **Information systems.** Variations of the management information system are in service on several railroads, and other roads are well along in the planning stages for such systems. R. W. Bills, manager, information systems, Western Pacific, pointed out that proper system design is necessary to control source data. One pitfall to avoid is that of mechanizing existing methods.

The WP's information system that goes into service next year, is a real time system for freight car control. Yards and terminals will schedule their work and switching assignments according to computer produced instructions. In brief, the control system will tell the car where to go (working from shipper requests, car supply, etc.) rather than reporting where freight cars are located.

Southern Pacific plans to have a similar freight car control system. Known as Total Operations Processing System, TOPS will consist of a central processing unit in the road's San Francisco headquarters, 365 input/output devices (in freight agencies, in yards, dispatchers' offices, etc.), and a communications network of 105 voice grade wire lines and microwave circuits connecting the central processor with the input/output devices scattered over 14,000 miles of mainline. TOPS, according to Mr. Coyne, will be a data collection and reporting system which gives complete, accurate and timely information relating to all aspects of the movement of carload freight on the SP.

TOPS will maintain control of every car on SP lines. The car record, which will be kept on disc files for random access of active information, will contain car initial and number, accounting, operating and traffic data. Also, there will be a yard or train file organized according to the location of the car. In addition to the two files in the central processing center, there will be a punched card in the field for each car (at a yard office, for example).

TOPS exploits one-time source reporting and multiple use of data. Once the original entry is made for a waybill or a car movement, it will not be necessary to re-enter this information. The information collected and stored in the central files can be made available to anyone on the railroad either on a scheduled basis or in response to a request.

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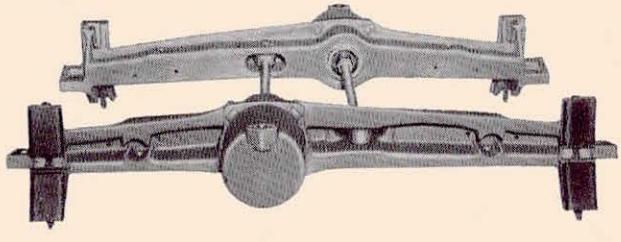
lowers transportation costs . . .

by cutting dead weight and reducing maintenance

COMPARATIVE WEIGHTS	CONVENTIONAL RIGGING	WABCOPAC BRAKE ASSEMBLY
50 OR 70 TON BOX OR REEFER	1500 lbs.	1280 lbs.
70 TON PIGGYBACK	1900 lbs.	1310 lbs.
90 TON HOPPER	1950 lbs.	1320 lbs.
100 TON ORE	3200 lbs.	1380 lbs.

Cuts dead weight up to 1800 lbs. per car. Replace conventional rigging with WABCOPAC Brake Assembly and convert the cost of hauling dead weight to increased pay-load. The WABCOPAC Brake Assembly can reduce dead weight 200 to 1800 pounds per car, depending on car design. This can be translated into savings of up to $90 per year.



Elimination of the slack adjuster, either manual or automatic, is a big step forward toward reduced maintenance. The WABCOPAC Brake Assembly needs no piston travel adjustment for the life of one-wear wheels. When multiple-wear wheels are used, piston travel adjustment is made only at the time of wheel turning.

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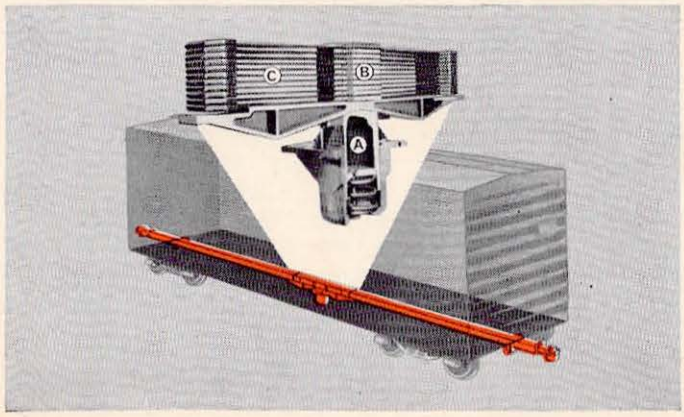

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NOW EASILY INSTALLED ON ALL TYPES OF NEW OR EXISTING CARS

Hope for transport bill in '64 dims

Rep. Oren Harris — the power behind H.R. 9903 — sees the fires under the controversial legislation being banked for this session. His plan: a fresh attack up Capitol Hill next year.

Chairman Oren Harris of the House Committee on Interstate and Foreign Commerce "seriously" doubts that the Committee will be able to give proposed transport legislation any further consideration this year.

"It's very late," the Democratic Congressman from Arkansas said recently in discussing prospects for revival of H.R.9903. That is the controversial bill, favored by railroads and truckers, which the House Rules Committee refused to clear for House consideration. It was shaped up by the Commerce Committee as a compromise proposal responsive to the late President Kennedy's 1962 Transportation Message, which has been endorsed by President Johnson.

● **Next year looks better.** As to prospects for next year, Mr. Harris said he was sure that the proposed legislation would be taken up by the new Congress. "Perhaps in the interim," he added, "further efforts toward an understanding can be made which should assist us as we start anew."

The new start will be required because all legislation pending short of final enactment will die with the death of the present Congress, which is now in its last regular session. Mr. Harris anticipates, however, that the elections will send back to Capitol Hill "the same leadership" and "the same team" that has given much consideration to transport problems.

The Harris statement was made to the Texas Motor Transport Association, and was his first public comment on H.R.9903 since the Rules Committee's adverse vote. That vote resulted from opposition of water carriers, port interests, the coal industry and the grain trade. Although the bill was already a much-watered-down version of the Kennedy-Johnson program, Mr. Harris made additional concessions in his vain attempt to get Rules-Committee clearance. He lost by one vote, and now refers to the Rules-Committee hearing as one at which the bill became "confused and confounded."

The rescue operation was initiated by President Johnson. "The President," Mr. Harris said, "wants a bill this year. He has made it clear to his staff, to me and others that he was committed to the passage of a bill along the general lines of the bill reported by the Committee on Interstate and Foreign Commerce."

● **Antitrust a hurdle.** The Chairman of the Committee then went on to report that some progress has been made in the Administration's undertaking "to resolve or narrow some of the controversies." The remaining difficulty was identified by Mr. Harris as the problem of determining "the extent of applicability of antitrust laws to the setting of rates by carriers for the hauling of agricultural products," which would be exempt from regulation.

The issue here is clearance under the Reed-Bulwinkle Act, which is now Section 5a of the Interstate Commerce Act. The Section accords immunity from antitrust laws for carrier rate-making procedures approved by the ICC. H.R. 9903 would have eliminated this immunity as to rates on the agricultural products which it proposed to deregulate.

Chairman Harris' position on that remains firm. "I cannot," he says, "bring myself to the point of providing freedom from regulation by any carrier, and at the same time exemption from the antitrust laws."

● **Clearance still sought.** While the AAR's endorsement of H.R.9903's original version was unconditional, the railroads nevertheless hoped that the bill might be modified to keep Section 5a applicable to the making of rates on agricultural products. This position is supported by shipper interests, including the National Industrial Traffic League. Mr. Harris noted that and went to to say he was "glad" to have the trucking industry "on my side of this question.'

The railroads are unhappy about this position of the Commerce Committee's Chairman. It could have the effect of alienating some railroad support for deregulation proposals. This threat was pointed up when H.R.9903 was before the Rules Committee. Representative Donald M. Fraser (D.-Minn.) then produced a letter from Soo Line President L. H. Murray who said enactment of the bill would "create chaos." Mr. Murray went on to explain that he was concerned principally about the proposed elimination of the protection of Section 5a, which would "make the conduct of rate and traffic negotiations impractical and virtually legally impossible."

With the NIT League and others making their support of rate deregulation contingent on continuation of full Section 5a coverage, the railroads are suspicious that the like positions of truckers and water carriers may be tactical rather than a stand on principle. The theory is that these railroad competitors might like Section 5a clearance for the making of deregulated rates, but their immediate interest is to keep the proposed legislation unpalatable to prospective allies of the railroads.

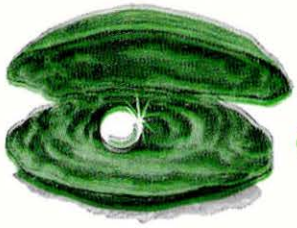
● **Action a remote possibility.** As to the railroad reaction to Mr. Harris' pessimism about legislation this year, informed observers concede that he is probably right.

At the same time, however, railroaders insist that real White House pressure could still bring legislation. That essential ingredient has been missing. Presidential endorsements have come several times—from the late President Kennedy and President Johnson. What it takes also is a top priority assignment on the White House legislative program and a follow-through with effective lobbying by the President's staff. The Transport Program has never had that full treatment.

Meanwhile, some of what were considered H.R.9903's "non-controversial" provisions have become controversial. These are embodied in a Senate bill, S.2796, introduced by the chairman of the Senate Commerce Committee, Senator Warren G. Magnuson (D.-Wash.). They include several motor carrier regulatory arrangements favored by the ICC and thought to be unopposed. They are opposed, however, by private truck operators.

● **Cost is to fore.** It is the growth of private trucking in competition with for-hire carriage which leaves Congressman Harris convinced that the regulatory laws need updating. He says:

"The economics of own-account transportation are in terms of direct cost to vehicle buyers and users. It is thus crucial that for-hire carriers be allowed, as soon as practicable, to shift more rapidly to charging on the basis of their own costs, and to set rates as low as possible in order to prevent further traffic slippage to shipper-owned vehicles." ■

Only the pearls  *are shipped—*

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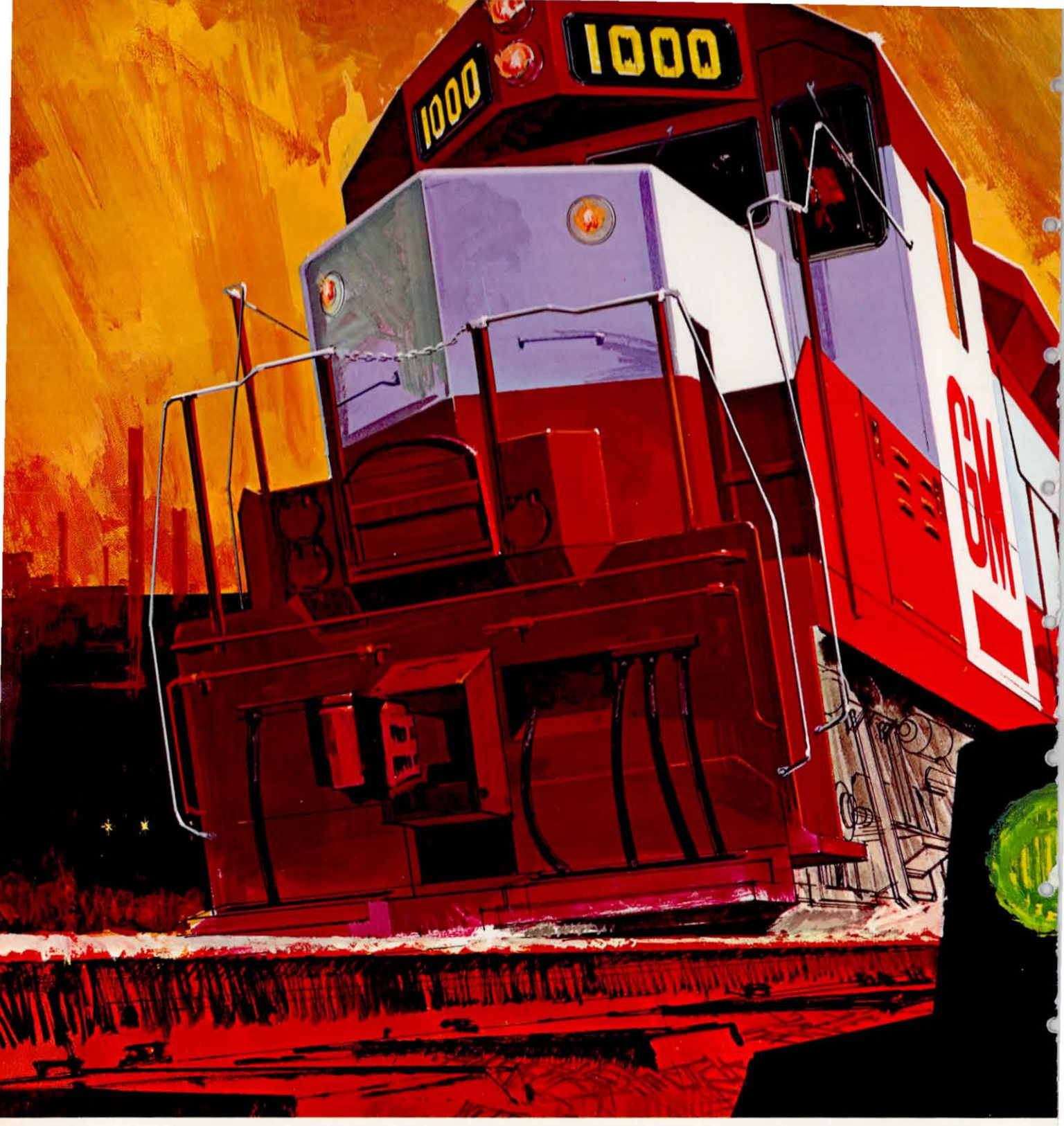

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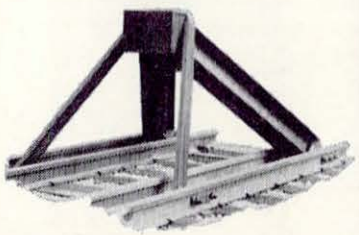

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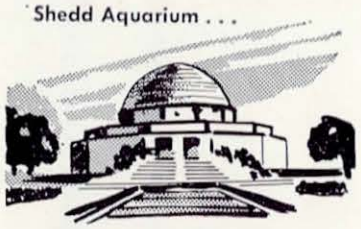

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AS THE PUBLISHER SEES IT

Why Taiwan likes CTC

TAIPEI, TAIWAN, JUNE 4

The Taiwan Railway Administration, Republic of China, operates 608 miles of railway, mostly 3 ft 6 in. gauge, serving as the island's principal avenue of commerce. The main line runs north and south along the east coast, connecting the port of Keelung and nearby coal fields, and the capital city of Taipei, with the industrial centers of the south. It includes one of the busiest stretches of single-track railroad, in terms of train density, anywhere in the world. One such section, 21 miles in length, handles 92 scheduled trains daily, and often many extras. About 60% are passenger, 40% freight. This transportation miracle is wrought by CTC. TRA has about 145 miles in service and hopes to add more. General Railway Signal installed one section, completed only this January. Sweden's L. M. Ericssons did another section.

TRA operates 930 scheduled trains daily. Passenger trains include overnight schedules with sleepers, including roomettes. Blue ribbon trains of the fleet, however, are the eight daily Limited-Express "Bienvenues," which make the 235-mile Taiwan-Taohsiung run in 5 hr 59 min. The Bienvenues are nine-car trains, with a mail-baggage car, six reclining seat coaches (each with a hostess), a dining car and a power car, hauled by EMD 1,425-hp G-12's. The power cars, assembled at TRA's Taipei shops, each have two Cummins-GE diesel generators furnishing power for the air-conditioning, heating and lighting. The second unit is a spare. The car also has a boiler to make hot water for tea, which is served gratis to all passengers.

I rode the diesel northbound over a 60-mile stretch of single track CTC, and logged 11 meets. We met five freights and five passengers southbound, and overtook one northbound freight. Passing tracks are three miles apart.

One surprise was a visit to the big Taiwan Aluminum Corp. plant at Taohsiung, which has a capacity of 20,000 ingot tons annually. It's a modern, fully integrated plant producing everything from ingots to printed foil and finished window frames. It meets all Taiwan's needs and exports 60% of output.

Biggest surprise of all—Taiwan has just contracted for its first heavy industrial export, and TRA is the supplier. On May 29 the road's Taipei shops signed a contract to furnish 100 cabooses to the Railways of Thailand.

Robert G. Lewis, Publisher

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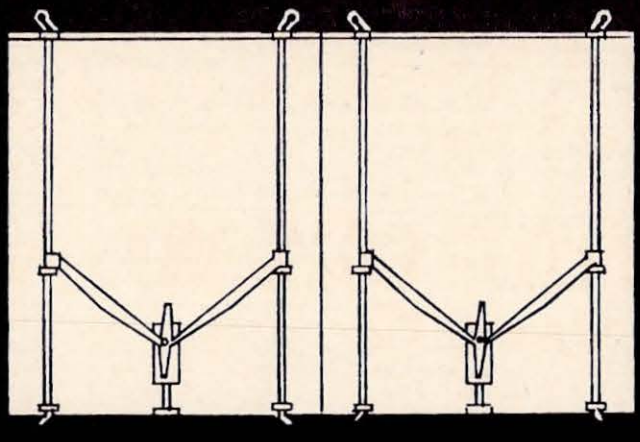

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PEOPLE IN THE NEWS

ARCADE & ATTICA.—William C. Kessel appointed assistant to the president of this road which operates a freight line and weekend passenger excursion trains using steam locomotives at Arcade, N.Y.

ASHLEY, DREW & NORTHERN.—J. B. White, mechanical officer in charge of diesel and car shops, advanced to the newly created position of chief engineer in charge of all construction.

CANADIAN NATIONAL.—W. E. McCall, regional passenger sales manager, Mountain Region, Edmonton, Alta., appointed general manager, passenger sales and services department, Montreal.

David W. Blair, coordinator of express freight services, Montreal, appointed assistant vice president—highway services there.

W. F. Barron, area accountant, Newfoundland area, promoted to area comptroller, St. John's, Nfld., succeeding **P. V. Burns. Ralph H. Wight,** junior methods analyst, Moncton, N.B., succeeds Mr. Barron as area accountant, St. John's.

A. J. Sweetman appointed European sales manager, Canadian National Transportation, Ltd., with jurisdiction over the United Kingdom, Eire and the European continent, at London. Mr. Sweetman will also continue his current responsibilities as deputy European commercial manager.

John Winsor Noel, assistant superintendent dockyard, St. John's, promoted to superintendent dockyard there, succeeding **Rupert C. Macklin,** retired. **Ernest K. Taylor,** estimator, dockyard department, succeeds Mr. Noel.

CANADIAN PACIFIC.—D. Masson, assistant to treasurer, appointed assistant treasurer, Montreal, succeeding **J. H. Norris,** who retired May 31 after 51 years of service. **A. C. Boughner** succeeds Mr. Masson.

CENTRAL OF GEORGIA.—Roy Moss, assistant general freight agent, Albany, Ga., named assistant freight traffic manager—sales and service, Savannah, succeeding **George W. Stradtman,** retired. **R. C. Hodges,** general agent, Dallas, Tex., appointed assistant freight traffic manager, Macon, Ga., succeeding **J. F. McKemie,** appointed western traffic manager, Chicago, succeeding **Robert M. Martin,** retired. **T. L. Deason,** commercial agent, Macon, appointed division freight agent there, succeeding **Lewis H. Wilson,** who replaces Mr. Moss at Albany. **J. L. Bannister,** division freight agent, Albany, Ga., appointed district freight agent, Dothan, Ala. **L. H. West** succeeds Mr. Hodges as general agent, Dallas. **F. R. Tivnan** appointed general agent, New York. Abolished position of New England agent.

CHICAGO & NORTH WESTERN.—M. C. Jacobs, superintendent, Iowa division, Boone, Iowa, appointed terminal manager, Chicago. Mr. Jacobs' successor is **M. R. Long,** superintendent, Wisconsin division, Milwaukee, Wis., who in turn is replaced by **J. C. Black,** transferred from the Lake Shore division, Green Bay, Wis. Mr. Black's successor is **R. C. Conley,** superintendent, Galena division, Chicago, who in turn is succeeded by **R. P. McDonough,** trainmaster, Galena division, West Chicago, Ill. **R. I. Frederickson** succeeds Mr. McDonough. **J. N. Ball** named superintendent, Chicago Freight Terminal division, Proviso, Ill. **W. G. Kranz** appointed superintendent, Nebraska division, Norfolk, Neb.

CHESAPEAKE & OHIO.—O. L. Long appointed chief of divisions bureau, Richmond, Va., succeeding **Karl S. Price,** retired.

A. C. Gibson appointed superintendent terminals and car ferries, Ludington, Mich. In addition to duties heretofore performed as terminal superintendent (which position is abolished), Mr. Gibson will have functional supervision over agency forces at Milwaukee, Manitowoc and Kewaunee, and direct responsibility for scheduling of the Lake Michigan car ferries.

DELAWARE & HUDSON.—Donald G. Bender appointed sales representative, Chicago, succeeding **Arthur F. Beyer,** transferred to the Cleveland agency, succeeding **Charles T. Burke,** resigned.

(Continued on page 49)

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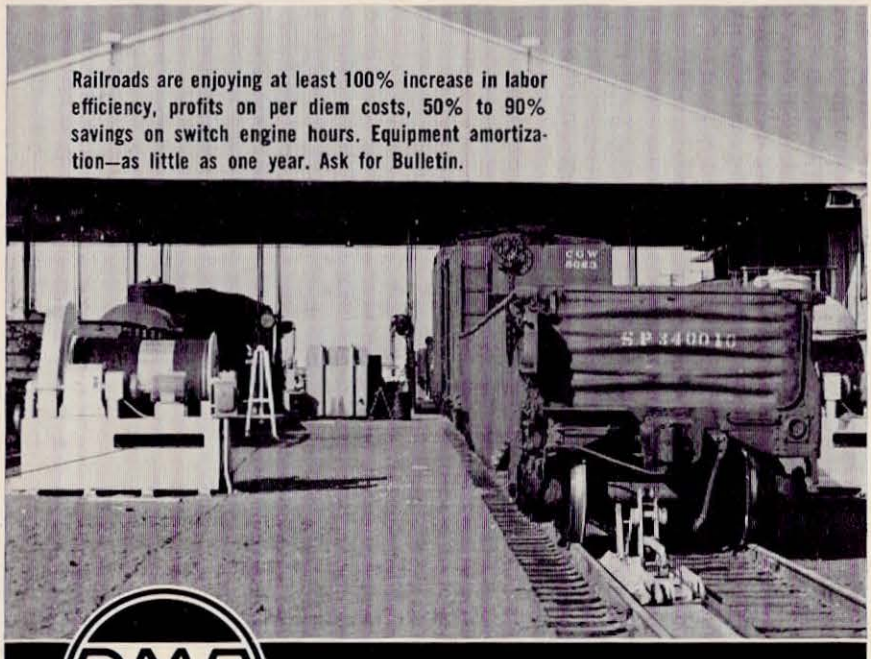
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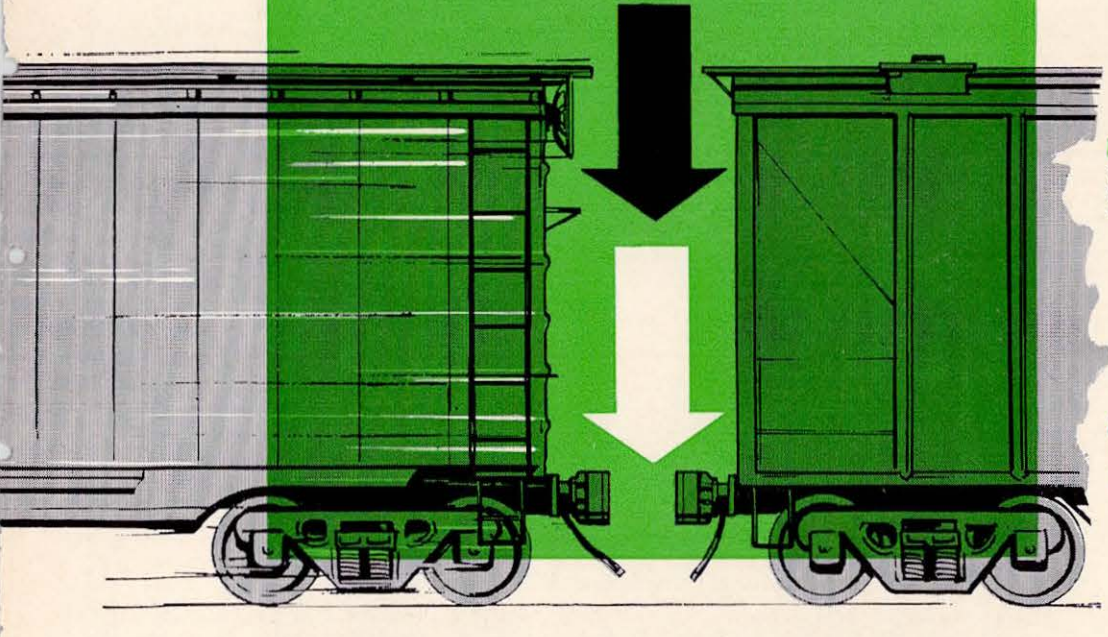

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MARK 40
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MARK 40-A
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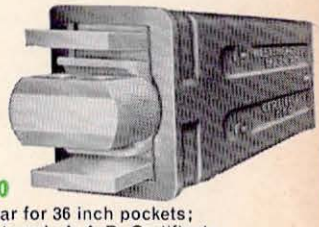
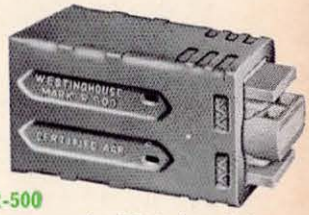
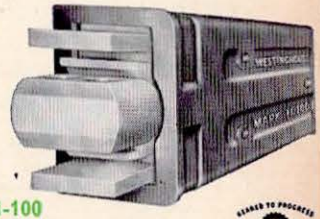


MARK 80
Friction gear for 36 inch pockets; 4¾ inches travel. A.A.R. Certificate No. 37, under A.A.R. Specification M901C.



MARK R-500
Friction-rubber gear for 24⅝ inch pockets; 3¼ inches travel. A.A.R. Certificate No. 42, under A.A.R. Specification M901E.



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Freight Operating Statistics of Large Railroads—Selected Item

Region, Road and Year		Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on lines: Serviceable Unstored	Road-locos. on lines: Serviceable Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine	1963	1,523	619,175	620,479	9,550	19,714	58.9	1,540,219	631,862	72		11	13.1
		1962	1,525	629,807	631,447	10,417	21,040	58.7	1,628,465	685,183	70	3	10	12.0
	N. Y., N. H. & Hfld*	1963	1,630	610,788	610,788	31,104	21,798	62.8	1,584,603	705,553	55	2	9	13.6
		1962	1,674	623,206	623,206	28,595	23,196	62.0	1,656,049	716,863	59	..	9	13.2
Great Lakes Region	Delaware & Hudson	1963	744	452,981	456,575	4,050	21,571	63.1	1,624,548	850,772	32	..	15	31.9
		1962	763	453,904	454,899	1,009	20,894	62.2	1,551,458	809,238	36	..	7	16.3
	Erie Lackawanna	1963	2,945	2,399,467	2,405,702	55,190	98,070	64.4	7,151,963	2,934,109	252	3	11	4.1
		1962	3,031	2,296,685	2,314,581	74,843	109,422	66.7	7,626,381	3,131,918	226	2	24	9.5
	Grand Trunk Western	1963	946	612,991	613,501	3,200	19,844	56.2	1,629,334	586,562	36	..	1	2.7
		1962	946	582,762	582,762	3,334	18,817	56.4	1,393,450	541,598	36	..	5	12.2
	Lehigh Valley	1963	1,083	559,943	566,413	8,892	22,075	61.5	1,677,932	798,450	30	..	4	11.8
		1962	1,095	506,031	511,747	7,507	22,425	63.1	1,629,993	761,870	30	..	4	11.8
	New York Central	1963	9,836	5,225,165	5,249,124	342,585	228,204	58.1	19,004,663	8,615,353	425	2	63	12.9
		1962	9,883	5,135,202	5,153,092	276,651	224,980	57.0	18,647,793	8 066,167	406	14	74	15.0
	New York, Chic. & St. L	1963	2,154	1,582,227	1,582,227	12,031	62,271	61.6	4,948,271	2,244,974	101	..	4	3.8
		1962	2,155	1,537,510	1,537,510	13,926	63,648	62.4	4,887,834	2,158,744	107	..	4	3.6
	Pitts. & Lake Erie	1963	214	90,018	90,018	....	4,850	61.1	473,036	284,609	9	3	1	7.7
		1962	216	86,924	86,924	....	4,509	61.5	437,846	259,934	12	3	1	6.3
	Wabash	1963	2 410	1,335,490	1,335,490	12,829	64,912	61.0	4,892,350	2,061,891	118	..	1	.8
		1962	2,410	1,356,991	1,356,991	12,630	65,560	61.5	4,886,289	2,054,167	122	..	2	1.6
Central Eastern Region	Baltimore & Ohio	1963	5,732	3,898,190	4,048,760	172,040	159,305	56.8	13,951,939	6,870,795	439	..	7	1.6
		1962	5,752	3,541,910	3,690,378	159,160	150,806	57.7	12,507,417	5,983,693	416	..	34	7.6
	Bessemer & Lake Erie	1963	202	112,166	109,581	81	4,135	62.4	436,637	268,304	14	..	..	..
		1962	203	105,338	99,449	47	3,470	58.9	369,315	220,838	5	6	..	..
	Central RR Co. of New Jersey	1963	576	319,696	323,713	14,982	11,327	58.8	1,012,842	553,218	59	..	13	1.8
		1962	576	337,324	341,301	16,650	11,992	60.4	1,020,555	533,261	69	..	3	4.2
	Chicago & Eastern Ill	1963	863	358,289	358,289	6,652	14,884	61.6	1,194,806	606,344	28	..	4	12.5
		1962	863	338,814	338,814	8,090	15,039	59.9	1,225,110	622,335	28	..	4	12.5
	Elgin, Joliet & Eastern	1963	205	155,046	158,083	....	4,884	57.8	449,627	252,069	37	11	1	2.0
		1962	205	145,261	148 433	....	5,091	58.7	448,840	246,383	34	13	..	..
	Pennsylvania System	1963	9,642	7,327,904	7,595,030	434,315	308,281	61.5	26,078 309	12,037,403	648	9	120	15.4
		1962	9,692	7,272,789	7,515,619	450,077	301,766	61.0	24,864,831	11,252,081	607	8	134	17.9
	Reading	1963	1,281	842,145	845,727	18,847	28,830	57.0	.2,723,350	.1,449,533	154	1	29	15.8
		1962	1,274	833,733	835,018	14,322	29,864	57.8	2,724,645	1,417,830	136	3	32	18 7
	Western Maryland	1963	868	436,537	457,326	33,658	16,618	57.7	1,589,131	882,073	43	..	1	2.3
		1962	852	379,664	394,481	24,137	14,897	57.7	1,350,804	721,729	40	1	1	2.4
Pocahontas Region	Chesapeake & Ohio	1963	5,079	3,722,098	3,736,234	70,214	170,096	53.4	16,226,589	8,752,146	247	..	16	6.1
		1962	5,083	3,473,649	3,481,134	65,792	153,102	53.2	14,342,789	7,563,869	249	..	10	3.9
	Norfolk & Western	1963	2,722	2,168,245	2,222,730	95,770	123,150	53.1	12,813,930	.6,932,808	158	..	29	15.5
		1962	2,724	2,024 617	.2,069,347	80,808	110,220	52.8	11,295,987	6,051,192	151	..	43	22.2
	Rich., Frod. & Potomac	1963	110	121,527	121,527	2,252	6,677	61.7	525,594	250,951	14	..	..	..
		1962	100	125,204	125,204	2,333	7,090	62.3	539,685	245,441	15	..	..	..
Southern Region	Atlantic Coast Line	1963	5,502	2,140,838	2,140,838	22,921	79,177	56.2	6,845,246	3,237,771	129	..	..	..
		1962	5 515	2,117,065	2,117,065	22,323	78,316	56.6	6,504,897	2,994,780	120	..	1	.8
	Central of Georgia	1963	1,709	572,387	572,387	993	19,930	60.9	1,615,036	831,154	22	1	2	8.0
		1962	1,709	524,361	524,361	7,002	19,923	60.8	1,626,957	800,180	32	..	4	11.1
	Florida East Coast	1963	572	220,143	220,143	....	7,947	50.4	702,582	286,708	42	..	6	12.5
		1962	572	275,074	275,074	....	9,761	51.8	834,317	319,189	50	2	1	1.9
	Gulf, Mobile & Ohio	1963	2,715	775,121	775,121	12	42,701	62.9	3,472,474	1,758,711	47	..	1	2.1
		1962	2,716	792,633	792,633	462	42,669	62.8	.3,380,958	1,659,608	43	..	3	6.5
	Illinois Central	1963	6,461	3,005,850	3,005,850	74,407	137,043	60.1	11,331,205	5,548,312	156	..	7	4.3
		1962	6,460	2,891,062	2,891,062	72,327	134,792	59.8	10,951,112	5,224,243	156	..	10	6.0
	Louisville & Nashville	1963	5,645	3,250,985	3,256,848	65,934	119,028	58.0	10,622,683	5,417,650	171	..	11	6.0
		1962	5,639	3,083,332	3,088,587	61,906	115,575	58.5	9,950,276	4,931,640	167	..	5	2.9
	Seaboard Air Line	1963	4,116	2,024,234	2,024,234	8,432	70,589	56.8	6,249,978	2,907,602	140	..	5	3.4
		1962	4.116	1,865,451	1,865,451	6,228	71,589	58.0	6,029,223	2,797,996	119	..	5	4.0
	Southern	1963	6,250	2,636,353	2,636,743	28,860	116,236	58.9	9,194,463	4,485,704	97	10	3	2.7
		1962	6.250	2,577,205	2,577,595	30,028	115,079	59.8	8,728,662	4,224,752	212	4	4	1.8
Northwestern Region	Chicago & North Western	1963	10,446	2,525,510	2,525,510	22,477	101,527	60.6	8,005,639	3,412,829	211	8	23	9.5
		1962	10,480	2,664,012	2,664,012	24,053	100,954	60.1	7,931,408	3,468,414	208	16	13	5.5
	Chicago Great Western	1963	1,427	377,319	377,319	655	19,524	63.9	1,459,023	696,260	33	..	2	5.7
		1962	1,427	380,635	380,635	680	19,779	65.2	1,456,990	699,649	24	..	5	17.2
	Chic., Milw., St. P. & Pac	1963	10,532	2,518,351	2,532,914	22,191	104,840	61.8	8,228,611	3,763,108	146	12	5	3.1
		1962	10,532	2,319,819	2,339,746	23,508	106,653	62.0	8,053,999	3,653,568	150	11	7	4.2
	Duluth, Missabe & Iron Range	1963	518	120,926	121,074	194	4,694	50.0	512,431	300,559	20	19	4	9.3
		1962	528	112,188	112,397	209	4,045	50.5	447,856	266,145	21	43	2	3.0
	Great Northern	1963	8,248	2,795,505	2,807,682	57,963	117,716	63.6	9,130,348	4,314,631	175	10	15	7.5
		1962	8,250	2,704,500	2,716,798	62,212	112,822	62.8	8,603,802	3,940,669	135	20	9	5.5
	Soo Line	1963	4,676	1,116,738	1,119,193	1,538	38,717	63.0	2,811,209	1,356,531	102	5	7	6.1
		1962	4,657	1,165,589	1,168,590	2,679	40,756	62.2	2,957,191	1,410,465	97	1	8	7.5
	Northern Pacific	1963	6,490	2,303,095	2,317,171	36,759	92,273	61.8	7,049,266	3,196,845	161	..	8	4.7
		1962	6,490	2,230,816	2,243,218	32,187	89,928	62.2	6,728,256	3,025,636	253	2	10	3.8
	Spokane, Portland & Seattle	1963	935	421,818	421,818	3,324	17,497	67.6	1,300,201	642,168	26	..	1	3.7
		1962	935	399,324	399,324	2,973	16,515	67.7	1,188,626	571,076	24	..	..	..
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F)	1963	12,948	7,304,656	7,430,516	90,256	322,314	62.7	24,884,394	9,764,948	767	1	67	8.0
		1962	12,970	7,364,384	7,555,665	91,289	329,621	62.0	24,949,446	9,533,114	737	3	44	5.6
	Chic., Burl. & Quincy	1963	8,511	3,138,799	3,136,199	82,031	137,607	62.0	10,259,290	4,676,170	133	..	5	3.6
		1962	8,512	3,114,781	3,114,365	61,749	137,493	62.2	10,040,270	4,489,340	123	..	4	3.1
	Chic., Rock I. & Pac	1963	7,776	2,563,741	2,573,323	3,141	101,443	60.5	8,049,900	3,447,183	219	..	1	.5
		1962	7,826	2,496,496	2,501,164	3,815	99,756	60.2	7,793,421	3,240,572	199	..	3	1.5
	Denver & R. G. Western	1963	2,132	890,710	933,656	59,524	38,833	69.9	3,047,216	1,470,070	88	8	15	13.5
		1962	2,128	852,206	893,666	56,873	38,898	69.8	2,887,948	1,395,884	90	7	11	10.2
	Southern Pacific	1963	11,449	8,702,333	8,937,285	313,814	372,881	64.7	27,847,960	12,660,311	987	..	39	3.8
		1962	11,483	8,522,575	8,768,280	374,008	375,225	64.7	27,612,009	12,231,646	984	4	45	4.4
	Union Pacific	1963	9,701	6,377,401	6,416,296	103,119	299,008	63.9	22,001,193	9,361,836	321	22	30	8.0
		1962	9,705	6,207,558	6,248,412	109,711	292,752	63.8	20,460,648	8,792,860	333	34	42	10.3
	Western Pacific	1963	1,184	684,214	701,099	46,908	30,828	68.8	2,313,362	1,004,315	57	1	5	7.9
		1962	1,184	691,362	708,031	44,612	30,560	68.4	2,286,632	980,134	53	1	1	1.8
Southwestern Region	Kansas City Southern	1963	889	334,579	334,887	1,191	22,863	64.9	1,837,946	889,523	21	..	1	4.5
		1962	889	321,085	321,241	879	21,729	64.0	1,686,717	795,581	18	..	1	5.3
	Louisiana & Arkansas	1963	746	214,828	214,828	9	11,163	62.4	962,546	478,116	17	..	1	5.6
		1962	746	208,366	208,366	37	10,499	60.2	871,253	410,551	14	..	1	6.7
	Mo.-Kans.-Texas Lines	1963	2,867	637,093	637,093	5,267	27,772	63.5	2,158,759	1,026,260	75	..	15	16.7
		1962	2,869	622,192	622,192	5,422	27,633	62.6	2,116,523	954,724	77	..	..	..
	Missouri Pacific	1963	9,223	3,405,076	3,405,076	18,907	159,806	61.8	12,896,559	6,090,626	217	..	16	6.9
		1962	9,301	3,278,120	3,278,120	26,118	157,226	61.6	13,010,639	5,754,337	180	2	13	6.7
	St. Louis-San Francisco	1963	4,503	1,841,936	1,841,936	17,083	71,511	65.2	5,139,001	2,454,571	101	2	4	3.7
		1962	4,503	1,762,510	1,762,510	16,248	70,635	65.5	4,961,373	2,326,769	73	14	20	18.7
	St. Louis Southw. Lines	1963	1,554	1,105,263	1,105,273	9,073	51,794	66.3	3,747,943	1,675,383	44	..	1	2.2
		1962	1,554	1,061,430	1,061,430	8,852	50,802	68.2	3,377,150	1,509,633	44	..	..	..
	Texas & Pacific	1963	1,812	907,519	907,519	2,466	38,296	63.3	2,910,886	1,325,033	53	..	2	3.6
		1962	1,812	837,655	837,655	8,873	36,389	61.9	2,751,496	1,210,405	44	3	6	11.3

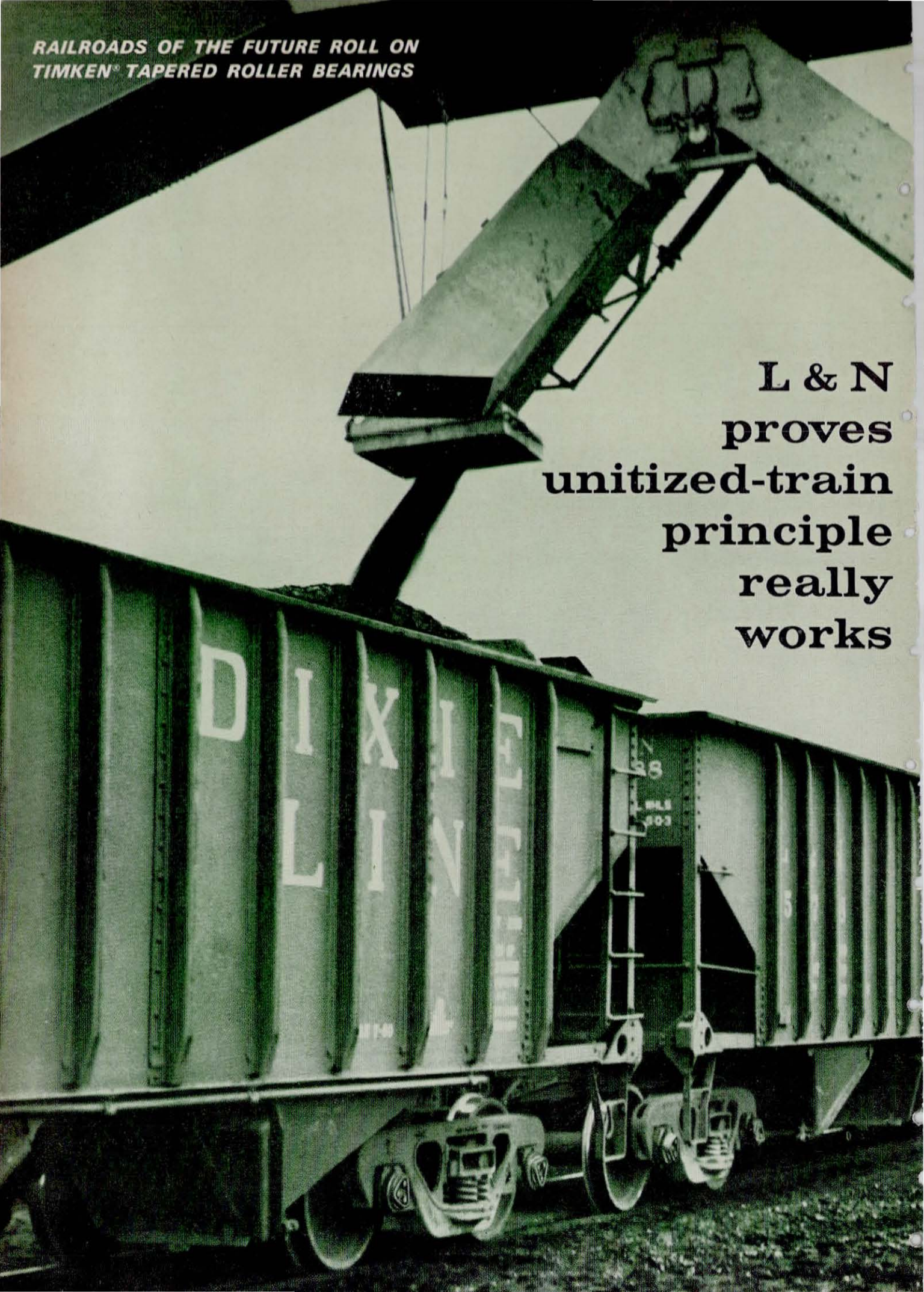
*Report of trustee or trustees.

or the Fourth Quarter 1963 Compared with Fourth Quarter 1962

	Region, Road and Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m. per train-hr. exc. locos and tenders	G.t.m. per train mi. exc. locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Cars-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine 1963	2,006	7,044	9,050	1.5	39,474	2,497	1,024	32.1	795	42.1	4,510	15.9	89.9
	1962	2,821	6,765	9,586	1.5	41,430	2,593	1,091	32.6	783	41.0	4,884	16.0	95.3
	N. Y., N. H. & Htfd.* 1963	2,649	12,767	15,416	4.7	38,307	2,594	1,155	32.4	501	24.7	4,705	14.8	127.5
	1962	3,475	11,255	14,730	3.4	40,807	2,657	1,150	30.9	512	26.7	4,655	15.4	134.5
Great Lakes Region	Delaware & Hudson 1963	3,452	3,965	7,417	4.2	74,062	3,606	1,888	39.4	1,368	55.0	12,429	20.7	116.6
	1962	5,030	2,618	7,648	6.1	65,584	3,438	1,794	38.7	1,284	53.3	11,528	19.2	122.8
	Erie Lackawanna 1963	11,423	16,286	27,709	5.9	65,011	3,014	1,236	29.9	1,125	58.4	10,829	21.8	107.3
	1962	14,994	17,404	32,398	10.5	70,187	3,342	1,372	28.6	1,062	55.7	11,231	21.1	111.1
	Grand Trunk Western 1963	4,187	5,891	10,078	5.8	66,134	2,662	958	29.6	642	38.6	6,740	24.9	189.4
	1962	4,887	5,450	10,337	5.4	59,967	2,396	931	28.8	589	36.3	6,223	25.1	163.8
	Lehigh Valley 1963	3,912	7,874	11,786	19.9	66,837	3,031	1,442	36.2	726	32.6	8,014	22.3	198.8
	1962	5,183	7,666	12,849	23.2	70,056	3,251	1,520	34.0	653	30.4	7,563	21.7	182.6
	New York Central 1963	46,576	68,519	115,195	7.0	65,656	3,667	1,662	37.8	810	36.9	9,521	18.1	145.4
	1962	53,505	65,826	119,331	6.9	62,428	3,669	1,607	36.3	742	35.9	8,981	17.2	142.8
	New York, Chic. & St. L. 1963	9,565	9,121	18,686	17.0	55,098	3,177	1,441	36.1	1,207	54.4	11,329	17.6	186.4
	1962	10,828	8,888	19,716	15.0	54,530	3,225	1,424	33.9	1,158	54.8	10,888	17.2	172.7
	Pitts. & Lake Erie 1963	4,311	2,346	6,657	7.7	91,091	5,268	3,170	58.7	380	10.5	14,456	17.3	55.6
	1962	6,164	1,879	8,043	10.9	77,798	5,065	3,007	57.6	332	9.4	13,080	15.4	60.3
	Wabash 1963	5,569	11,773	17,342	5.6	92,655	3,663	1,544	31.8	1,234	63.7	9,300	25.3	128.6
	1962	5,630	12,480	18,110	4.2	91,444	3,601	1,514	31.3	1,287	66.8	9,265	25.4	127.2
Central Eastern Region	Baltimore & Ohio 1963	45,971	28,342	74,313	9.7	64,764	3,645	1,795	43.1	917	38.6	13,029	18.1	102.2
	1962	47,483	31,258	78,741	10.9	63,785	3,602	1,723	39.7	829	36.2	11,307	18.1	99.1
	Bessemer & Lake Erie 1963	3,274	1,013	4,287	16.6	64,534	4,165	2,560	61.9	756	18.7	14,437	16.6	91.9
	1962	5,048	1,162	6,210	3.9	57,356	3,884	2,323	63.6	464	12.4	11,825	16.4	114.4
	Central RR Co. of New Jersey 1963	3,064	9,445	12,509	7.5	44,169	3,286	1,795	48.8	445	15.5	10,440	13.9	72.7
	1962	3,985	10,756	14,741	12.4	45,308	3,135	1,638	44.5	393	14.6	10,063	15.0	77.3
	Chicago & Eastern Ill. 1963	2,611	3,362	5,973	9.9	65,753	3,369	1,710	40.7	1,205	48.0	7,637	19.7	126.4
	1962	2,638	2,328	4,966	13.5	68,480	3,661	1,860	41.4	1,292	52.1	7,838	18.9	121.1
	Elgin, Joliet & Eastern 1963	6,148	5,978	12,126	3.9	25,381	2,975	1,668	51.6	239	8.0	13,365	8.8	46.3
	1962	7,175	5,137	12,312	3.6	25,051	3,186	1,749	48.4	225	7.9	13,064	8.1	46.0
	Pennsylvania System 1963	83,725	82,293	166,018	12.1	64,668	3,646	1,683	39.0	764	31.8	13,570	18.2	122.8
	1962	96,237	90,746	186,983	15.7	62,646	3,501	1,584	37.3	668	29.3	12,619	18.3	125.1
	Reading 1963	13,198	12,777	25,975	11.6	53,335	3,234	1,721	50.3	600	20.9	12,300	16.5	71.3
	1962	15,254	13,747	29,001	14.2	55,482	3,268	1,701	47.5	556	20.3	12,097	17.0	68.2
	Western Maryland 1963	7,023	4,677	11,700	15.8	52,255	3,711	2,060	53.1	879	28.7	11,046	14.4	137.9
	1962	7,887	2,566	10,453	13.8	51,844	3,626	1,937	48.4	833	29.8	9,208	14.6	122.0
Pocahontas Region	Chesapeake & Ohio 1963	57,294	19,552	76,846	5.3	75,200	4,387	2,366	51.4	1,183	42.9	18,730	17.2	172.1
	1962	60,438	16,659	77,097	4.8	73,203	4,150	2,189	49.4	1,032	39.3	16,175	17.7	165.2
	Norfolk & Western 1963	56,926	10,727	67,653	1.3	98,777	6,029	3,262	56.3	1,210	40.5	27,684	16.7	159.0
	1962	54,885	7,534	62,419	3.9	98,095	5,723	3,066	54.9	1,122	38.7	24,146	17.6	142.5
	Rich., Fred. & Potomac 1963	109	1,379	1,488	1.5	108,819	4,331	2,068	37.6	1,726	74.4	24,798	25.2	101.8
	1962	215	1,600	1,815	1.0	101,521	4,318	1,964	34.6	1,563	72.5	24,253	23.6	98.3
Southern Region	Atlantic Coast Line 1963	17,593	16,156	33,749	4.8	58,364	3,206	1,517	40.9	1,044	45.4	6,396	18.3	212.6
	1962	19,427	14,375	33,802	5.2	55,135	3,083	1,420	38.2	985	45.5	5,902	17.9	218.4
	Central of Georgia 1963	4,651	8,492	13,143	8.2	45,421	2,823	1,453	41.7	714	28.1	5,286	16.1	277.5
	1962	5,450	3,842	9,292	10.6	52,588	3,113	1,531	40.2	936	38.4	5,089	16.9	175.1
	Florida East Coast 1963	718	4,178	4,896	1.2	58,607	3,191	1,302	36.1	773	42.5	5,448	18.4	56.6
	1962	669	3,327	3,996	.8	50,559	3,036	1,161	32.7	984	58.1	6,065	16.7	65.9
	Gulf, Mobile & Ohio 1963	8,355	9,145	17,500	8.0	83,581	4,484	2,271	41.2	1,116	43.1	7,041	18.7	190.7
	1962	8,564	9,099	17,663	5.8	80,489	4,269	2,096	38.9	1,033	42.3	6,642	18.9	207.5
	Illinois Central 1963	26,274	23,845	50,119	5.6	65,292	3,805	1,863	40.5	1,166	47.9	9,334	17.3	226.6
	1962	29,094	25,560	54,654	4.8	66,317	3,811	1,818	38.8	1,033	44.6	8,790	17.5	215.6
	Louisville & Nashville 1963	33,450	20,206	53,656	9.2	53,654	3,274	1,670	45.5	1,083	41.0	10,432	16.4	218.0
	1962	40,551	17,526	58,077	12.2	55,829	3,239	1,605	42.7	942	37.8	9,506	17.3	220.8
	Seaboard Air Line 1963	17,500	12,015	29,515	3.6	63,370	3,128	1,455	41.2	1,107	47.3	7,678	20.5	176.3
	1962	19,486	12,518	32,004	3.3	63,381	3,295	1,529	39.1	978	43.1	7,389	19.6	190.3
	Southern 1963	20,033	32,578	52,611	3.0	60,478	3,196	1,706	38.6	951	41.8	7,801	17.3	293.2
	1962	18,871	30,811	49,682	3.1	61,297	3,391	1,641	36.7	917	41.8	7,347	18.1	145.7
Northwestern Region	Chicago & North Western 1963	21,727	22,979	44,706	5.5	54,574	3,187	1,359	33.6	812	39.8	3,551	17.2	129.5
	1962	24,992	22,565	47,557	10.2	50,793	2,989	1,307	34.4	870	42.1	3,597	17.1	137.5
	Chicago Great Western 1963	1,864	4,015	5,879	3.2	73,259	3,881	1,852	35.7	1,285	56.4	5,303	18.9	126.7
	1962	2,502	4,006	6,508	4.2	72,530	3,842	1,845	35.4	1,003	43.5	5,329	18.9	153.7
	Chic., Milw., St. P. & Pac. 1963	24,121	18,745	42,866	6.9	71,041	3,279	1,500	35.9	928	41.8	3,884	21.7	179.3
	1962	27,969	18,242	46,231	9.9	70,950	3,482	1,580	31.3	742	34.9	3,771	20.4	164.1
	Duluth, Missabe & Iron Range 1963	11,684	417	12,101	9.3	74,136	4,578	2,685	64.0	269	8.4	6,307	17.5	35.0
	1962	13,408	526	13,934	1.1	74,481	4,259	2,531	65.8	209	6.3	5,479	18.7	22.6
	Great Northern 1963	26,335	13,596	39,931	4.5	75,150	3,290	1,555	36.7	1,156	49.5	5,686	23.0	171.7
	1962	23,771	15,379	39,150	3.9	73,633	3,206	1,468	34.9	1,014	46.3	5,192	23.1	241.4
	Soo Line 1963	10,101	6,280	16,381	5.0	52,166	2,519	1,216	35.0	935	42.3	3,153	20.7	118.7
	1962	9,531	5,871	15,402	5.5	51,061	2,542	1,212	34.6	849	39.4	3,292	20.1	129.2
	Northern Pacific 1963	21,450	13,621	35,071	4.3	67,834	3,079	1,396	34.6	996	46.5	5,354	22.2	156.7
	1962	19,655	13,251	32,906	4.1	66,534	3,033	1,364	33.6	945	45.2	5,067	22.1	100.1
	Spokane, Portland & Seattle 1963	1,248	4,286	5,534	3.3	47,371	3,105	1,534	36.7	1,178	47.4	7,465	15.4	197.6
	1962	1,303	4,351	5,654	2.6	43,976	3,001	1,442	34.6	1,037	44.3	6,639	14.8	188.1
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1963	53,089	30,802	83,891	3.9	89,225	3,446	1,352	30.3	1,257	66.1	8,197	26.2	105.1
	1962	51,114	29,092	80,206	4.2	87,001	3,407	1,302	28.9	1,267	70.6	7,989	25.7	113.6
	Chic., Burl. & Quincy 1963	18,623	24,212	42,835	3.3	73,336	3,282	1,496	34.0	1,181	56.1	5,972	22.4	271.6
	1962	21,543	22,854	44,397	3.5	70,652	3,240	1,449	32.7	1,114	54.9	5,733	21.9	285.0
	Chic., Rock I. & Pac. 1963	13,405	15,750	29,155	9.3	69,549	3,147	1,348	34.0	1,306	63.5	4,819	22.1	140.6
	1962	13,216	16,972	30,188	9.2	67,930	3,127	1,300	32.5	1,117	57.1	4,501	21.8	146.1
	Denver & R. G. Western 1963	7,084	5,358	12,442	2.9	74,913	3,430	1,655	37.9	1,241	46.9	7,495	21.9	106.0
	1962	8,439	6,417	14,856	4.9	72,024	3,397	1,642	35.9	1,141	45.6	7,130	21.3	102.4
	Southern Pacific 1963	42,465	35,058	77,523	1.6	79,571	3,218	1,463	34.0	1,716	78.1	12,020	24.9	105.3
	1962	42,286	38,739	81,025	1.8	79,786	3,259	1,444	32.6	1,587	75.2	11,578	24.6	102.8
	Union Pacific 1963	32,699	32,799	65,498	2.0	96,128	3,478	1,480	31.3	1,510	75.4	10,490	27.9	196.4
	1962	33,910	30,185	64,095	2.1	92,236	3,324	1,428	30.0	1,486	77.6	9,848	28.0	178.6
	Western Pacific 1963	2,995	3,681	6,676	2.7	98,925	3,399	1,475	32.6	1,476	65.8	9,220	29.3	141.8
	1962	3,128	3,542	6,670	3.3	95,635	3,317	1,422	32.1	1,716	78.3	8,998	28.9	152.4
Southwestern Region	Kansas City Southern 1963	2,392	4,828	7,220	7.7	112,296	5,516	2,670	38.9	1,367	54.1	10,876	20.4	199.1
	1962	3,064	5,332	8,396	4.5	105,026	5,268	2,485	36.6	1,021	43.5	9,727	20.0	204.2
	Louisiana & Arkansas 1963	1,759	2,787	4,546	10.7	90,901	4,521	2,245	42.8	1,114	41.7	6,966	20.3	164.9
	1962	1,939	2,790	4,729	8.8	82,404	4,196	1,977	39.1	954	40.5	5,982	19.7	186.1
	Mo.-Kans.-Texas Lines 1963	6,015	4,249	10,264	22.0	58,265	3,399	1,616	37.0	1,012	43.1	3,891	17.2	88.2
	1962	6,026	4,519	10,545	17.2	59,674	3,405	1,536	34.6	985	45.5	3,617	17.5	97.1
	Missouri Pacific 1963	19,768	38,079	57,847	2.2	77,353	3,816	1,802	38.1	1,212	51.4	7,178	20.4	187.6
	1962	21,424	16,848	38,272	4.2	80,800	3,979	1,760	36.6	1,556	69.0	6,725	20.4	203.9
	St. Louis-San Francisco 1963	7,430	9,106	16,536	2.0	61,396	2,807	1,341	34.3	1,571	70.3	5,925	22.0	199.9
	1962	9,734	8,305	18,039	1.4	60,410	2,833	1,329	32.9	1,396	64.6	5,616	21.5	196.4
	St. Louis Southw. Lines 1963	2,310	4,238	6,548	3.3	79,258	3,401	1,521	32.3	2,571	119.9	11,719	23.4	278.0
	1962	2,597	3,674	6,271	4.5	77,822	3,189	1,425	29.7	2,353	116.0	10,559	24.5	266.2
	Texas & Pacific 1963	2,375	6,063	8,438	.7	73,283	3,245	1,477	34.6	1,721	78.6	7,948	22.8	200.8
	1962	2,813	3,202	6,015	4.3	82,198	3,340	1,469	33.3	2,127	103.4	7,261	25.0	198.9

RAILROADS OF THE FUTURE ROLL ON TIMKEN® TAPERED ROLLER BEARINGS

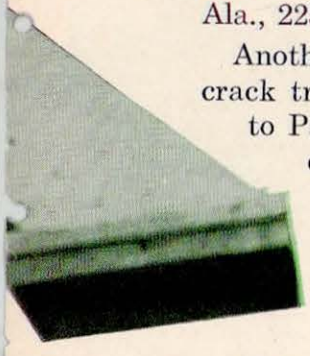
L & N proves unitized-train principle really works



In two hours, this Louisville & Nashville unitized train will be filled with 5,100 tons of coal from the Paradise, Ky., stripmines.

Ten hours after that, it will have reached Widow's Creek, Ala., 225 miles down the track.

Another 12 hours later, this crack train will have returned to Paradise with a string of empty hoppers ready for reloading.



This operation has been so successful that the L&N added a second train last year.

L&N rolls on Timken® "AP" tapered roller bearings. High-utilization operations like this one can't be delayed by hot-boxes. And bearing operating and maintenance costs must be low.

Timken bearings are now averaging over 100,000,000 car-miles between setouts. That's a performance record no other bearing can match.

Timken "AP" bearings are precision-made of high quality, nickel-rich steel. What's more, they're designed to cut inspection time drastically, reduce lubricant costs, too.

The Timken Roller Bearing Company, Canton, Ohio. Also makers of Fine Alloy Steel and Removable Rock Bits.

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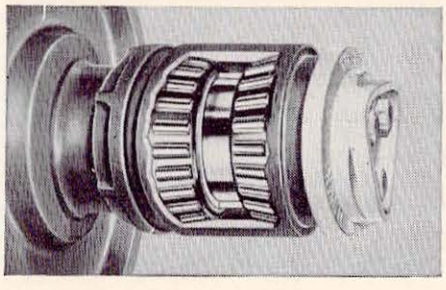
TIMKEN®

TAPERED ROLLER BEARINGS



(Continued from page 44)

GREAT NORTHERN.—Lieut. Col. Theodore P. Heller appointed freight traffic manager, St. Paul. Col. Heller recently retired as chief of research and development in traffic management in the Defense Traffic Management Service.

Harold H. Holmquist, superintendent, Butte division, Great Falls, Mont., transferred to the Kalispell division, Spokane, Wash., to succeed **Henry M. Shapleigh,** who retires July 1 after 41 years' service. Mr. Holmquist's successor is **Paul F. Cruikshank,** superintendent, Dakota division, Grand Forks, N.D., who in turn is replaced by **Eugene C. Coan,** master mechanic, Great Falls. **Ralph H. Hemmesch,** superintendent, Minot division, Minot, N.D., transferred to the Mesabi division, Superior, Wis., to succeed **Worthington L. Smith,** named superintendent, Willmar division, Minneapolis. **Eugene F. Oviatt,** superintendent, Willmar division, becomes superintendent, Minot division.

MISSOURI - KANSAS - TEXAS. — Established a traffic analysis department at St. Louis, effective June 1. The department, which will be headed by **Elmer G. Ossing** as manager, traffic analysis, will function as a subdepartment of the sales and service department.

READING.—Walter A. Bauer, terminal trainmaster, Philadelphia, promoted to assistant superintendent, Reading division.

Donald M. Kerr named to the newly created position of assistant to vice president—marketing, Philadelphia (RA, June 8, p. 37). Mr. Kerr was formerly marketing manager, Nuclide Corp., State College, Pa.

REA EXPRESS.—Harold J. Kuhns, director, Technical Services Division, New York, appointed assistant vice president—operations there. **James A. Smith,** chief engineer in charge of research and surveys in connection with the design and construction of new express terminals, named director, Technical Services, and chief engineer, Technical Services Division.

Edward J. Hardebeck, division operations manager, Wisconsin-Northern Illinois Division, appointed operations manager, Texas Division, Houston, succeeding **Willis E. Wright,** retired after 47 years service.

Supply Trade

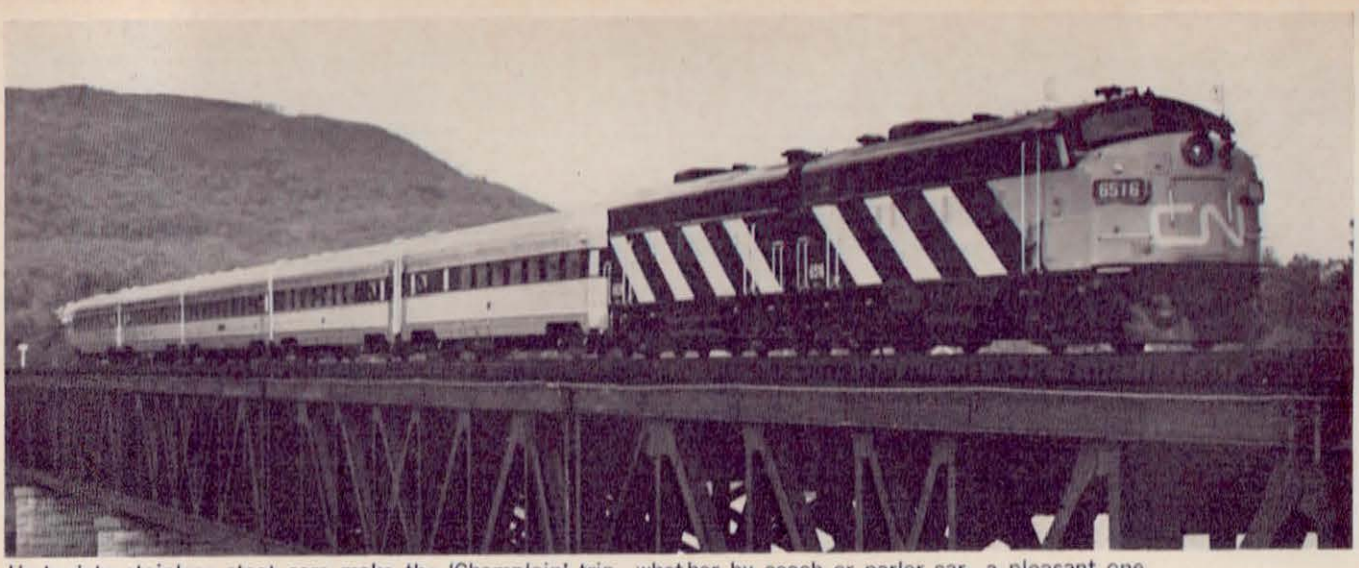
Wayne Guillerey, vice president and general manager, **Shunk Manufacturing Co.,** has announced plans for a $100,000 expansion of Shunk's Bucyrus, Ohio, facilities.

The Transportation Products Division of **National Steel Corp.,** Pittsburgh, Pa., has contracted to act as national sales representative for **Preco, Inc.,** Los Angeles.

Robert A. Alexander has been appointed manager of car repairs and parts sales, **Shippers' Car Line Division, ACF Industries, Inc.,** New York, servicing railroads and industrial owners of railroad rolling stock.

Lewis Bolt & Nut Co., Minneapolis, has appointed **W. K. Davidson & Co., Ltd.,** Montreal, as their sales representative to railroads, car builders and associated industries in Canada.

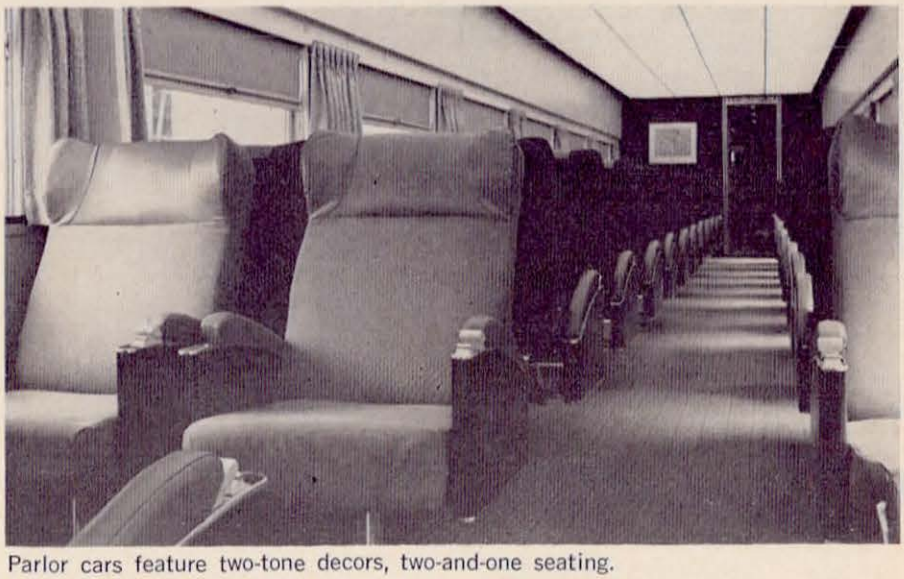
A. J. Ohlsen has been named purchasing agent, passenger and transit activities, **Pullman-Standard** division of **Pullman, Inc.,** succeeding **S. L. Walsh,** retired.



Up-to-date stainless steel cars make the 'Champlain' trip—whether by coach or parlor car—a pleasant one.

CN's newest glamor train

The 'Champlain' offers fast schedules, 'new-look' cars between Montreal and Quebec.



Parlor cars feature two-tone decors, two-and-one seating.

The inaugural run of the "Champlain" took place last week on the Canadian National's Montreal-Quebec line—and the trip supplied one more proof that the CN is energetically going after passenger business.

During the past year, Canadian National has been busily trying to show that a large share of the long-haul passenger market can be recaptured by means of shaved-down schedules, modernized equipment and attractive fares. The "Champlain" is an attempt to apply the same philosophy to a medium-haul run where competition with highways is at its keenest.

• **Running time cut.** Operated as part of a Canadian National-Canadian Pacific pool service between Montreal and Quebec, the "Champlain" cuts travel time substantially between the two points: the 170-mile daily run is made in three hours and 15 minutes—a half hour under the running time of the next fastest train. This is managed by operating at speeds up to 80 mph and by eliminating all intermediate stops except one at suburban Ste. Foy, just outside Quebec.

Travel time may be cut still further: CN operating officers hope to shave a few more minutes from the present schedule into Montreal's Central Station, where connections are made with trains to Toronto and Ottawa. They are also considering the possibility of extending the "Champlain" directly onto the Montreal-Ottawa run, thus providing through service from Quebec to Ottawa.

• **Modern passenger cars.** Fixed consist of the "Champlain" is five stainless steel air-conditioned cars built by Budd—two coaches with 64-passenger capacity each, two 39-passenger-capacity parlor cars and a diner-lounge. The cars were purchased from the Reading and completely renovated before being placed in service.

Both coach and parlor seats are on a reserved basis. A special feature in the parlor cars is that extra-wide reclining seats—two on one side and one on the other—have replaced the traditional solitary armchairs.

Stewards are in attendance in all cars, and a public address system provides music and announcements in both French and English. Other extras are free pillows and receptacles between each pair of seats to accommodate beverages.

Passengers can also take advantage of a modified version of CN's famous Red, White and Blue fares—an incentive to travel by rail at off-peak periods. Savings run as high as 40%.

• **Accent on service.** Another aspect of the CN's campaign for increased passenger business is its emphasis on personalized services. In the case of the "Champlain," two manuals were issued for guidance in dealing with the public—one for train personnel, another for station personnel. ■

We're riding long HIGH, WIDE AND HANDSOME

The Hi-Cube (10,000 cu. ft.) boxcar.
86'6" Inside Length.
12'9" Inside Height.

Sure we're proud...

We were the first to meet the railroads' design and production needs for this car.

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"THE CAR YOU HAVE IN MIND MAY ALREADY BE DESIGNED"

BR-957

sugar

soda ash

rice

and all this revolutionary new car

Imagine a railroad car that's as clean as your kitchen sink, and carries practically everything. The candy-maker knows his sugar will arrive 100% pure. The photodeveloper manufacturer unloads his sodium thiosulphate—then the car is simply hosed out with water, and it's ready for a load of flour or silica sand, rice or soda ash. This stainless steel covered hopper car, an innovation from U. S. Steel, is a contamination-free rail car for the shipment of dry bulk commodities.

U. S. Steel developed the new stainless steel car to provide railroads and shippers with a corrosion-resistant, easy-to-clean car that would produce more revenue with less out-of-service time. Because it's stainless steel, the car needs no costly protective linings. A simple water rinse or sweeping out between ladings keeps it "kitchen clean."

The prototype car, built for U. S. Steel for testing purposes, ran a gamut from fully loaded impact tests to thousands of miles of on-the-road hauling of foodstuffs and chemicals. Shippers and receivers have said the new car couldn't be better. Railroads, too, like the fast turn-around time, the elimination of lading contamination

THIS MARK TELLS YOU A PRODUCT IS MADE OF MODERN, DEPENDABLE STAINLESS STEEL.

silica sand

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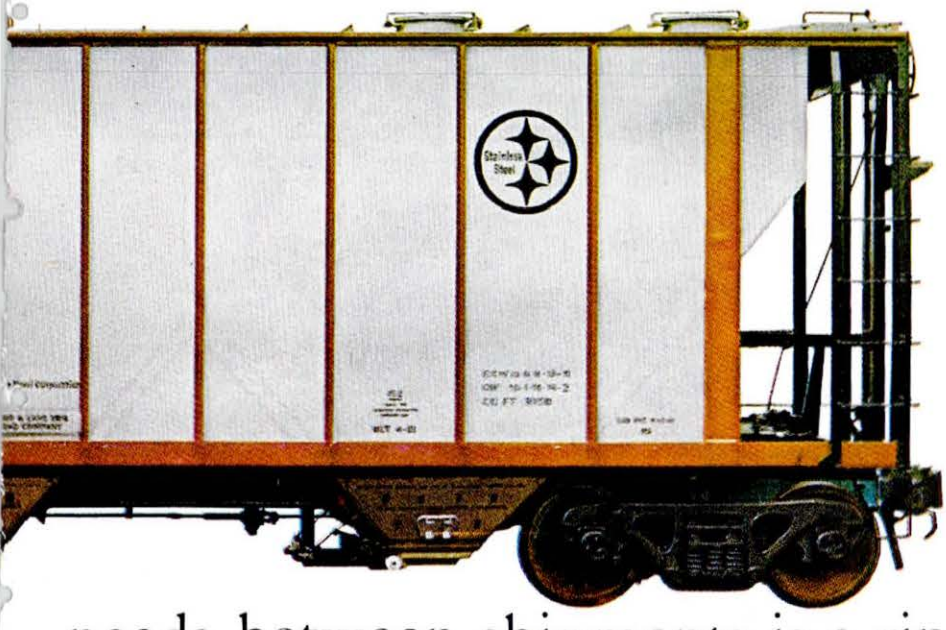
flour



needs between shipments is a rinse

claims, and the extremely low maintenance costs. Today, there are 72 USS TENELON Stainless Steel cars working on the railroads, and a southeastern road is acquiring 11 new ones.

The steel that makes the car economically feasible is another innovation from U. S. Steel. USS TENELON Stainless Steel is nearly twice as strong as conventional stainless steels, so thinner stainless sheets were used to fabricate the hoppers, cover, and all other parts that contact the lading. Two USS-developed high-strength low-alloy steels, USS COR-TEN and USS TRI-TEN brands, are used in the car's structural members for more strength and less weight. The car weighs 16% less than a conventional covered hopper car, and carries a full 100 tons of cargo.

If you'd like the full covered hopper car story, write for our "USS TENELON Car" booklet. United States Steel, Room 7156, 525 William Penn Place, Pittsburgh, Pennsylvania 15230. Export Distributors: United States Steel International (New York), Inc.

USS, COR-TEN, TRI-TEN and TENELON are trademarks.

United States Steel USS

Fewer hot boxes because Texaco Journaltex HD cuts friction by 60%, has 8 times greater film strength

Journaltex HD—especially designed for journal bearing lubrication—has set records nationwide for its ability to prevent hotbox setoffs.

Journaltex HD's 60% lower coefficient of friction hits hotboxes right where they start by keeping operating temperatures at a safe low level. And Journaltex stays on the job under pressures that squeeze out non-additive type oils—actually gives eight times greater load-carrying capacity.

Journaltex HD helps reseat bearings—while they're working!—by redistributing minute amounts of babbitt. Result: far less tendency to scoring, wear, misalignment.

For full details on how Journaltex HD can improve your hotbox setoff record and actually cut your lube costs, call the nearest Texaco Railway Sales Office in Atlanta, Chicago, New York, St. Louis, Minneapolis or San Francisco. Or, write to Texaco Inc., *Railway Sales Division,* 135 East 42nd Street, New York, N. Y. 10017.

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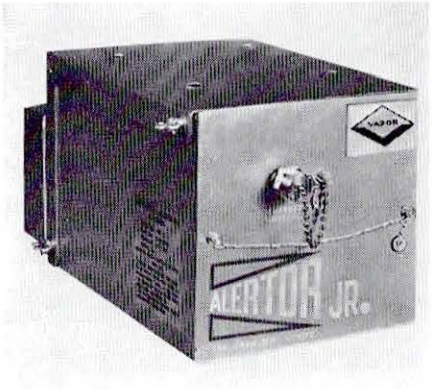
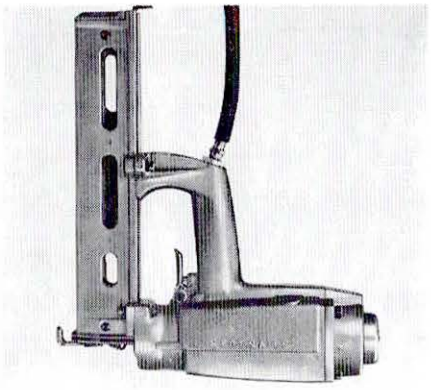
VISITING THE WORLD'S FAIR? SEE THE WORLD'S LARGEST ROAD MAP, PRESENTED BY TEXACO, IN THE NEW YORK STATE PAVILION

NEW PRODUCTS REPORT



Dead Man Control (RA-1)

The Alertor Jr. electronic alertness control device which will be available after July, can be mounted under the locomotive cab floor. It provides all features of the original Alertor, and is designed for use where cost is a controlling factor. According to Vapor, the unit cannot be circumvented by the engineman, and it permits full freedom of action. If the audible signal is disregarded, the brakes are applied within a preselected interval. *Vapor Corp.*



Pneumatic Nailing Gun (RA-2)

The "V" and "VL" type multi-purpose guns drive fasteners up to 2½ in. in length into hardwood. A new design casting and power unit gives added power and reduction in weight (less than 6½ lb). V-model features include an interchangeable aluminum track for driving staples, fasteners, pins and brads, replaceable piston liner, built-in "Bump-fire" safety, two air feed ports and adjustable exhaust deflector. *Spotnails, Inc.*

Air Dryer (RA-3)

The 3-way drying feature of the new triple-scrub air dryer dependably removes foreign bodies such as moisture and oil vapor, bacteria and hydrocarbons. Atomization, mechanical separation and chemical desiccant are said to assure an uninterrupted supply of sterile air for paint spraying, sand and shot blast, pressure testing, and air tools. The air dryers are available for working pressures to 10,000 psi. *General-Erie Corp.*

Fire Extinguishing (RA-4)

Preliminary experiments indicate that a fluorchemical foam simultaneously applied with dry chemical on fires involving liquid hydrocarbon such as gasoline and oil provides "fast knock-down, excellent control, extinguishment and securing of petroleum fires." The development of this method using "light water" is a joint project of Ansul and the 3M Co. of St. Paul, Minn., and is being investigated by the Naval Research Laboratory. *Ansul Co.*

Inorganic Coating (RA-5)

The high metallic zinc content (92% by weight in dry applied film) and low silicate binder content of the 46-F-L inorganic coating are said to give heavy industrial steel surfaces maximum protection in corrosive atmosphere and to arrest under-film creepage. The abrasion-resistant coating cures in a minimum of time and adheres firmly to the steel substrate. It resists temperatures up to 750 deg F dry heat. *Socony Paint Products Co.*

Cordless PABX (RA-6)

The new type 30E PABX has a maximum capacity of 20 trunks, 100 lines and 12 links. Features include "station answering" which permits any PABX station to receive incoming calls when the switchboard is unattended by picking up the receiver and dialing the trunk code. It is available with push-button operation of the attendant's position, key sender operation, busy override, call storage, consultation and call transfer. *U.S. Instrument Corp.*

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS ADVERTISED ON PAGES 2 3 4 6 9 10 13 14 15 16-17 30-31 32-35 36-37 39 40-41 42A 42B 43 44 45 48-49 51 52-53 57 58 59 60 63 64 67 68

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS DESCRIBED ON PAGES 55 and 56 MARKED RA-1 RA-2 RA-3 RA-4 RA-5 RA-6 RA-7 RA-8 RA-9 RA-10 RA-11 RA-12

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READERS' SERVICE DEPT. (Attention George Johnson)

NEW PRODUCTS REPORT

Sonic Cleaner (RA-7)

Model 320 MU ultrasonic cleaner is a self-contained unit which has a 1⅝ quart stainless steel cleaning tank. It features simplified one-knob control and has an automatic, self-adjusting circuit that requires no tuning regardless of work load or cleaning solution level. Design of the drain is such that the user can remove cleaning solution without lifting or tipping the machine. An electrical timer is optional. *L&R Manufacturing Co.*

Two-way radio (RA-8)

The "Handi-Talkie" two-way portable radio features selective call equipment, a transmitter providing 1.4 watts power output, a highly-sensitive receiver, single-battery power supply and built-in antenna, microphone and speaker. The one-piece, 40-ounce, transistorized radio is designed to operate on VHF frequencies in the 144 to 174 mc band. Group calls to radios and mobile units can be made by turning off the selective call feature. *Motorola.*

Transportation Computer (RA-9)

The H-200 computer has high internal speeds, multiple peripheral operations and a real-time data communications capability. It is a modular, completely solid-state system able to perform 500,000 operations (cycles) a second. It has a main memory capacity expandable between 2,048 and 32,768 characters of information. A separate control memory transmits two million instructions a second to the system. The H-200 can process at the rate of 1.5 million computations per minute. *Honeywell.*

Crossing Recorder (RA-10)

Model 28 highway grade crossing recorder indicates on magnetic tape when a train approaches and leaves a crossing and when the flashing lights are operating. Elapsed time (in minutes) for a 2-year period is indicated from the time of installation. Only when it is desired to analyze a 24-hour period is the tape removed. Otherwise the 24-hour tape continuously records and erases. Three or five information channels can be provided. It operates on 117 volt AC, or 10 volts DC (standby). *ETR Inc.*

Code Converters (RA-11)

A new unit operating at the rate of 18-20 characters per second converts punched card data into paper tape form or vice versa. This new converter may be used with existing 024 or 026 card punch machines. In addition to straight conversion, the Dura converter can be programmed to skip blank card columns, punch special codes, etc., to provide maximum flexibility and efficiency. Parity checks are made of odd or even-bit codes during conversion. *Dura Business Machines, Inc.*

Data Communications (RA-12)

The new IBM 7711 data communication unit is a buffered terminal which permits two-way tape-to-computer, tape-to-tape, and tape-to-card communications. The new 7711 is available with core storage buffers of from 200 to 2400 characters. At voice grade speeds of 150, 250 and 300 characters per second, the 7711 can communicate with all other data transmission units. A new buffer for the 1009 data transmission unit offers 400 positions of core storage. *IBM Corp.*

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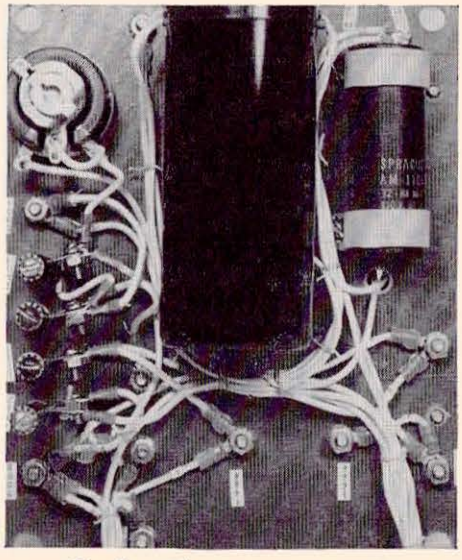
6/22/64

What moves in this new Regulator-Rectifier?



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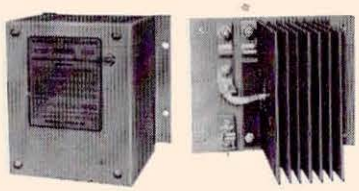
Bring the world of solid-state circuitry to any locomotive with the new Fairbanks-Morse Regulator-Rectifier package. Only the current moves in these new replacements for old-style relay-operated units. With no mechanical parts, the FM Transistor Voltage Regulator and Battery Charging Rectifier are immune to dirt. Wear becomes a thing of the past. The compact FM Transistor Voltage Regulator can replace bulkier units. Features include simple adjustment, micro-second response and accurate voltage regulation to ±1%. The FM Battery Charging Rectifier has a large copper heat sink for high ambient temperature conditions and eliminates battery charging contactors and reverse current relays. Using a single rectifier cell, it provides even transient voltage suppression with no chance of burning or misadjustment. Four mounting bolts and the necessary terminal connections can mean the difference between outmoded mechanical units and the new FM Transistor Regulator-Rectifier's unbeatable in-service record. Standardized replacement units for FM, ALCO, EMD, GE and BLH locomotives. For complete specifications, contact our Engine Accessories Dept., Beloit, Wisconsin.



Colt Industries
Fairbanks Morse
Power Systems Division

Excess capacity hinders railroads

The industry must streamline itself, says PRR's Saunders, if it is to successfully meet the tough competition ahead.

Railroads must trim off the excess fat of over capacity if they are to get in shape to meet growing competition in the transportation field.

The locker room-style advice was given by Pennsylvania Chairman Stuart T. Saunders, who outlined some of his industry's problems to members of the Paper Industry Management Association in Philadelphia, June 10.

"Railroads are the backbone of our transportation system, and if they are to function efficiently and economically they must make all the improvements they need to meet competitively the growing demands of business and industry," he told the convention. "The voluntary merger movement, with its realignment of the nation's hundred or so Class I railroads into a much smaller number of streamlined, highly competitive systems, is the best hope of accomplishing this."

● **Unwanted surplus.** Drawing a comparison, he pointed out that U.S. manufacturing facilities are currently running at 87% of capacity, while railroads are operating at only about 50% of capacity, primarily because of surplus facilities which are a hangover from the days when railroads had a monopoly.

"Today, some 23,000 miles or about 10% of the approximately 225,000 main line miles in service in this country, carry 50% of our total freight ton-miles; at the other extreme, 67,000 miles, or about 30%, carry only 2% of the total freight business," he said.

Over capacity, commented Mr. Saunders, is most acute in the northeast quadrant of the country.

"For example, today seven major trunk line railroad routes are operating between New York and Chicago, when three could handle the traffic."

● **Sapping the strength.** Revitalization is pumping new life into the railroad industry, but despite this improvement railroads can no longer support the present overbuilt plant, Mr. Saunders emphasized. "This sprawling complex simply cannot be operated with the efficiency and economy required under modern competitive conditions."

"Through merger the railroad industry can eliminate duplicating and overlapping facilities such as yards, stations, shops and offices, and can achieve better utilization of the most efficient plant.

"Larger and more efficient railroad operating units will give the shipping public better transportation in terms of speed, economy and dependability. Terminal and gateway expenses, which account for a third of the costs, and two-thirds of the time involved in long-haul freight-car movement, can be greatly reduced. Delays for train makeup, reclassification, interchange with other railroads, and other costly procedures for keeping a shipment moving to its destination, can also be held to a minimum. These and other advantages can thoroughly satisfy the concern of the Interstate Commerce Commission for adequate public transportation."

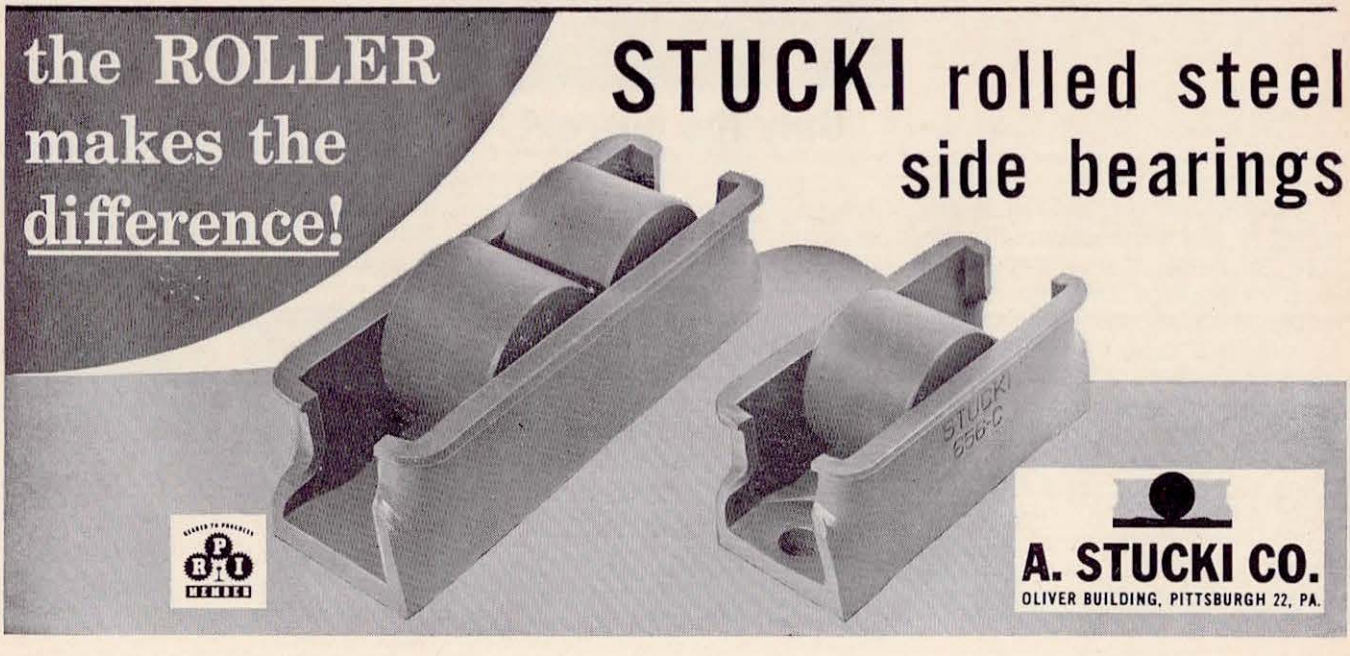
● **Plenty of competition.** The Pennsylvania's chairman said the railroad industry "is not overly concerned by the contention of some governmental agencies that mergers would unduly lessen competition."

"Competition within the rail industry and between railroads and other modes of transportation would be heightened, all to the eventual benefit of the traveling and shipping public."

Mr. Saunders said the ICC's action in the Atlantic Coast Line-Seaboard Air Line merger case showed "how sensibly the fear of railroad monopoly of transportation has subsided." He is also optimistic over chances for the Pennsylvania-New York Central merger, being "particularly encouraged by the attitude which labor is taking toward our consolidation. Now that an agreement has been worked out with them, we have removed one of the principal obstacles to realization of our plans."

He had praise for the ICC's handling of merger cases in general, and that of the PRR-NYC in particular.

"I believe that our case is being processed with as much dispatch as is possible under the circumstances . . . and am hopeful for a favorable report from the examiners this fall." ■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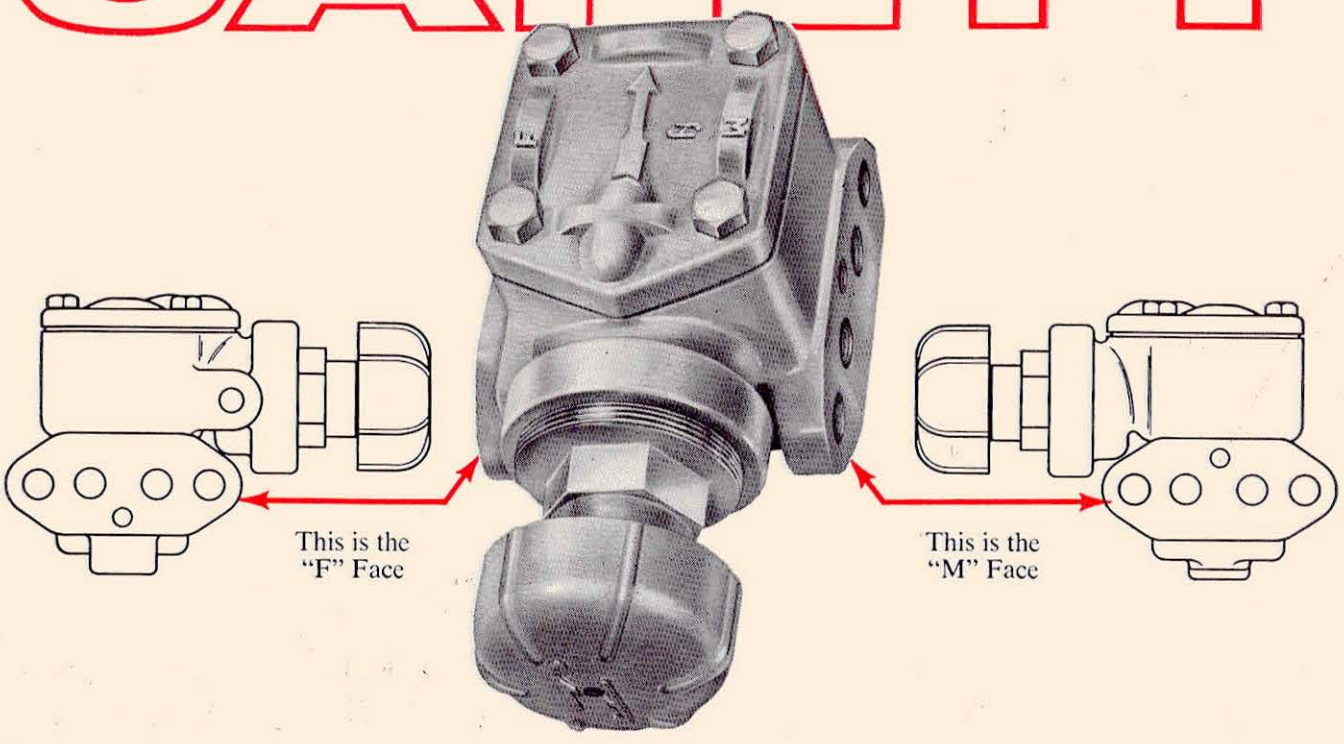

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Replacement of existing Feed Valves, which do not have remote control, is supremely simple and the F-6 affords extra advantages in maintained high efficiency together with hour-saving ease of maintenance and service.

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They expected it to cost more initially . . . but to yield greater economy in the long run because of lower operating costs and improved payloads. To their surprise, however, over-all cost of the urethane-insulated tank car was 12% lower than traditional constructions using styrene foam!

As a result, Thermice is "very enthusiastic" about urethane, according to vice president Robert E. Glass who designed the car and closely supervised its construction.

"Published data credits urethane with **twice** the efficiency of styrene foam. We believe our foamed-in-place technique produces K-factors only one-third as high," reports Mr. Glass. "There's less chance of heat leaks through seams and metal supporting members. Insulation is more uniform with less chance of human error in application."

Thermice Corporation uses urethane insulation in all their liquid CO_2 and dry ice vehicles and in customer storage tanks as well.

Urethane rigid foam used in the tank car illustrated is based on Nacconate® 4040 Diisocyanate, the original isocyanate for one-shot rigid foams. Write for information.

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MARKET OUTLOOK

Carloadings rise

Loadings of revenue freight in the week ended June 13 totaled 610,514 cars, the Association of American Railroads announced on June 18. This was an increase of 30,362 cars, or 5.2%, compared with the previous week; a decrease of 5,747 cars, or 0.9%, compared with the corresponding week last year; and an increase of 20,213 cars, or 3.4%, compared with the equivalent 1962 week. Ton-miles generated by carloadings in the week ended June 13 are estimated at approximately 13.7 billion, an increase of 4.3% above the corresponding week of 1963, and 14.5% above the 1962 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, June 13

District	1964	1963	1962
Eastern	86,028	87,711	85,939
Allegheny	106,060	107,909	98,634
Pocahontas	64,320	58,364	52,971
Southern	110,013	113,051	108,040
Northwestern	83,148	85,266	86,542
Central Western	118,953	120,044	116,534
Southwestern	41,992	43,916	41,641
Total Western Districts	244,093	249,226	244,717
Total All Roads	610,514	616,261	590,301
Commodities:			
Grain and grain products	53,653	55,824	48,209
Livestock	1,972	1,990	2,432
Coal	122,455	119,141	110,923
Coke	9,559	8,839	6,155
Forest Products	39,229	37,304	38,114
Ore	53,751	54,816	56,301
Merchandise l.c.l.	12,635	17,050	23,718
Miscellaneous	317,260	321,297	304,449
June 13	610,514	616,261	590,301
June 6	580,152	605,361	582,760
May 30	576,938	549,861	529,285
May 23	595,099	598,419	580,383
May 16	591,436	601,062	586,946
Cumulative total, 24 weeks	13,100,226	13,000,549	13,192,995
Estimated Revenue Ton-Miles (millions) 24 weeks	298,900	280,800	271,400

PIGGYBACK CARLOADINGS.—U.S. piggyback loadings for the week ended June 6 totaled 16,693 cars, compared with 15,986 for the corresponding 1963 week. Loadings for 1964 up to June 6 totaled 375,620 cars, compared with 341,914 for the corresponding period of 1963.

IN CANADA.—Canadian carloadings were not available as this issue went to press.

FREIGHT-TRAIN CARS

► *Canadian National.*—Ordered 500 50½-ft, 70-ton box cars from National Steel Car for delivery beginning in October. Cars will be equipped with 9-ft doors and hydraulic cushioning devices.

► *Louisville & Nashville.*—Ordered 800 freight cars at a cost of $11.8 million. Included in the order are 400 100-ton covered hoppers to be built by Pullman-Standard; and 300 70-ton box cars, with cushion underframes, and 100 70-ton pulpwood cars, from ACF. Deliveries will begin in October. L&N had planned to buy the equipment as part of its 1965 car-purchase program, but the order was placed now to meet expanding shipper needs.

► *New York Central.*—Ordered 226 steel covered hopper cars at a cost of $3.5 million. ACF will build 122 Center Flow cars, with delivery scheduled for completion in July. General American will construct the remaining 104 covered hopper cars and will begin delivery in October. NYC will use the new equipment for its growing dry-bulk commodity traffic.

► *Rock Island.*—Ordered 12 all-steel caboose cars from International Car at a cost of approximately $176,400 for delivery during the fourth quarter.

► *Western Pacific.*—Ordered from Gunderson Brothers 75 flat cars, all with cushion underframes, as follows: five 50-ft cars for missiles; 10 60-ft cars for general service; 10 60-ft cars for farm equipment; 50 60-ft cars with bulkheads. Five of the cars have been received, and the remainder are scheduled for delivery by July. Total cost of the order is approximately $1.1 million.

LOCOMOTIVES

► *Pennsylvania.*—Ordered 20 2,500-hp diesel-electric locomotives at a cost of $4.3 million. EMD will supply 14 units, and Alco 6. The order brings to 70 the number of new locomotives being acquired by PRR this year at a total cost of $13.8 million.

NEW FACILITIES

► *Chicago Transit Authority.*—Awarded a $157,475 contract to Union Switch & Signal Division of WABCO for automatic interlocking signal equipment at the Logan Square terminal. Another contract for $79,390 went to Allied Structural Steel for rehabilitating the 35th Street station. The CTA Board is also accepting bids for 58 trainphones, to supplement the 145 presently in service.

PURCHASES

► *Three Months' Purchases Up 13.5%.*—Purchases by domestic railroads of fuel, material and supplies in the first three months of this year were $44,963,000, or 13.5%, higher than in the comparable 1963 period. Purchase estimates in the following tables were prepared by Railway Age.

PURCHASES*	March 1964	Three Months 1964	Three Months 1963
	(000)	(000)	(000)
Rail	$ 4,280	$ 14,468	$ 10,952
Crossties	4,135	10,590	9,158
Other Material	91,890	262,609	218,634
Fuel	29,349	90,243	94,203
Total	$129,654	$377,910	$332,947

*Subject to revision.

YOU OUGHT TO KNOW

April accident report: There were no passenger fatalities and 97 passenger injuries in April, according to the ICC. These compared with one fatality and 139 injuries in April 1963. Twenty employees were killed on duty and 1,489 injured in April, compared with 15 killed and 1,486 injured in April 1963.

ACF Division headquarters moves: Head office of the American Car and Foundry Division of ACF Industries will be transferred from New York City to St. Charles, Mo., it was announced by ACF Chairman William T. Taylor. The move is designed to centralize all of the firm's freight car building activities other than actual production at the ACF Technical Center already established at St. Charles. The division general manager, department heads and their staffs are involved in the transfer, which is expected to be completed by Sept. 1.

Budd car passes 'squeeze test': The first of 600 stainless steel 'brightliners' being built for New York City Transit Authority by Budd, has successfully passed a 200,000-pound "Squeeze test," conducted at Budd's Hunting Park plant.

PR and bargaining: The public-relations aspect of the work-rules dispute continues to worry the ops. Said BLE Grand Chief Roy E. Davidson at a recent Chicago meeting: "So much success was achieved by the carriers through skillful public relations and advertising that they may be tempted to devote time and money to continuing to exploit those techniques, rather than to perfecting collective-bargaining techniques." As for the BLE's future plans in this area: The union will make a "determined effort to restore the carriers' incentive to bargain, and we will use public relations in a constructive, not destructive, fashion to help restore a climate in which bargaining can prosper and in which the skills and responsibilities of our craft will get broader understanding and appreciation."

Back to school time. Santa Fe sent 33 management men to a six-week Institute of Business Economics Course at the University of Southern California June 22. Started by Santa Fe and USC in 1952, the program reflects what Santa Fe President Ernest S. Marsh describes as his railroad's conviction that "familiarity with economic history and with basic economic principles is essential to an understanding of current economic problems and to an intelligent appreciation of alternative courses presented in domestic and foreign affairs."

New Nickel Plate chairman: Frank M. McHale, an Indianapolis lawyer, has been elected chairman of the New York, Chicago & St. Louis. He succeeds Lynne L. White, who died May 29. NKP President Myron B. Phipps was made chief executive officer.

CP to build a Montreal complex: The Canadian Pacific announced plans for a $30 million hotel and office building complex in downtown Montreal, adjoining Windsor Station. Canadian Pacific Hotels will operate the 38-story, 620-room hotel, which is scheduled for completion in time for the 1967 World's Fair. An outside developer will build the 20-story office building simultaneously.

Reprieve for Boston commuters? The Massachusetts legislature approved a $225 million plan to aid commuter transportation in the Boston area. The action comes at the same time that the Boston & Maine petitioned the ICC for permission to abandon passenger service into Boston.

TEA honors J. G. Lyne: The Traffic Executives Association—Eastern Railroads honored James G. Lyne with a testimonial dinner in New York last week, marking completion of Mr. Lyne's seven years as head of TEA's rate research activities. Railway Age's editor, who now resumes full-time duties with the magazine, was asked in 1957 to assist in setting up a research program aimed at helping eastern roads improve pricing techniques. Speakers at the dinner last week included AAR President D. P. Loomis, NYC President A. E. Perlman, P&LE President John W. Barriger, A. J. McGinnis, president of Simmons-Boardman Publishing Corp., and Ray Gill, TEA chairman. William White, chairman of the Erie Lackawanna and the Delaware & Hudson, was toastmaster.

Current statistics

Net income, estimated	
3 mos., 1964	$144,000,000
3 mos., 1963	84,000,000
Carloadings, revenue freight	
24 wks., 1964	13,100,226
24 wks., 1963	13,000,549
Freight cars on order	
May 1, 1964	34,702
May 1, 1963	19,869
Freight cars delivered	
4 mos., 1964	23,829
4 mos., 1963	13,300
Serviceable cars	
May 1, 1964	1,409,716
May 1, 1963	1,412,847

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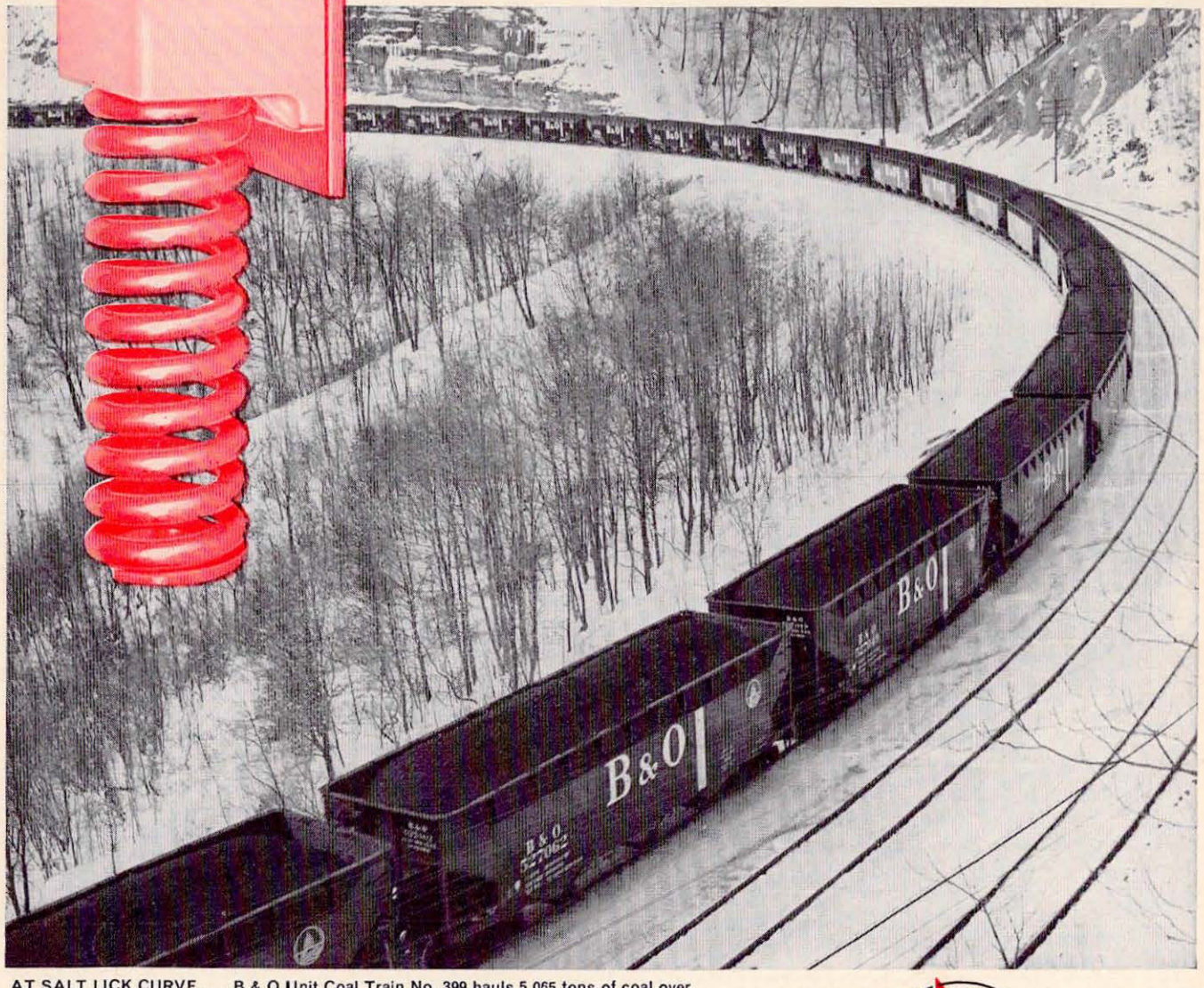

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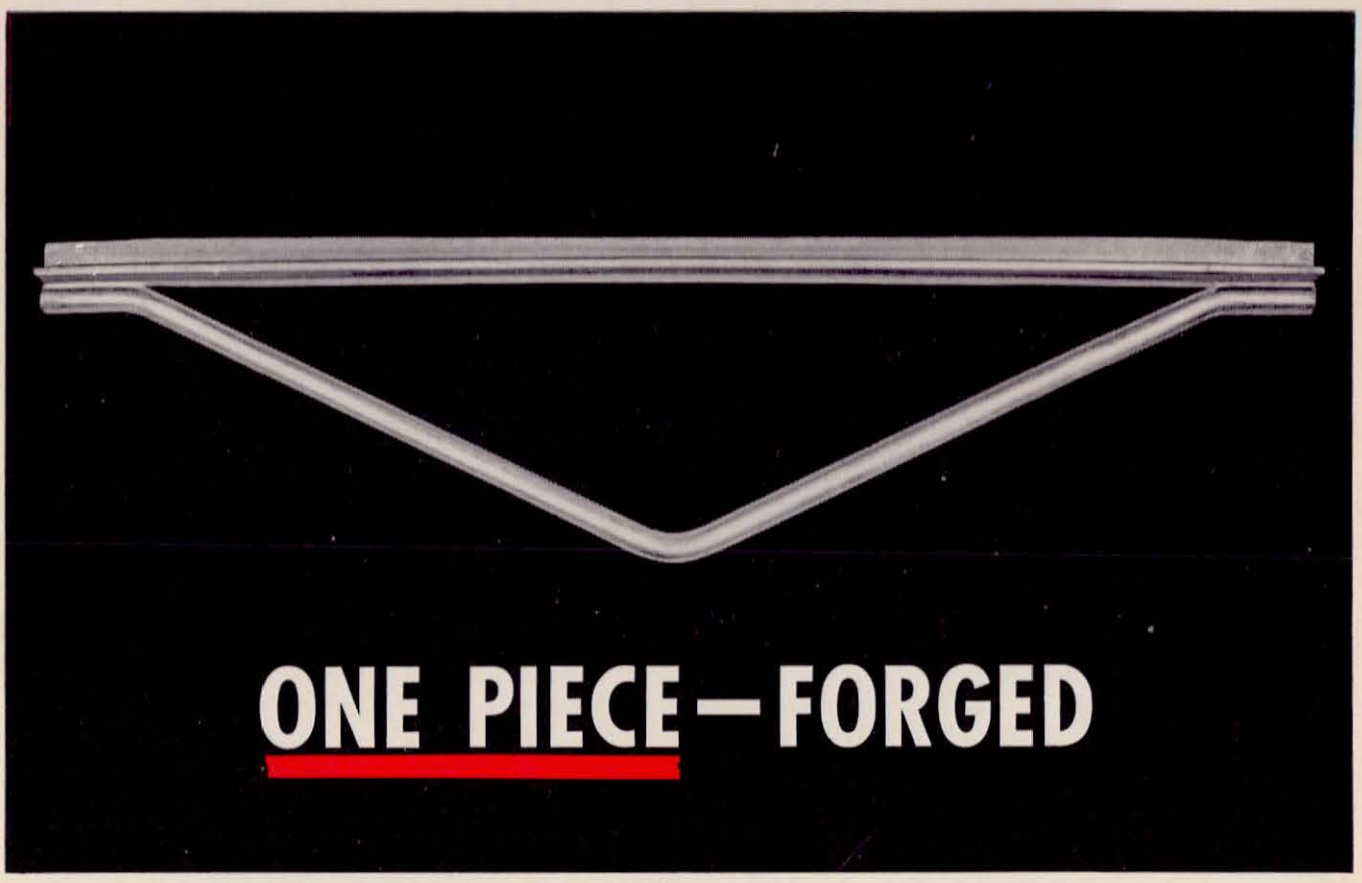

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DAVIS SOLID-TRUSS BRAKE BEAMS

UNIT AND HANGER TYPES

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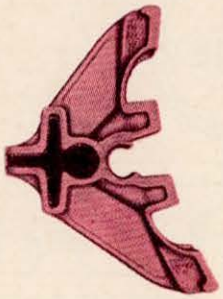
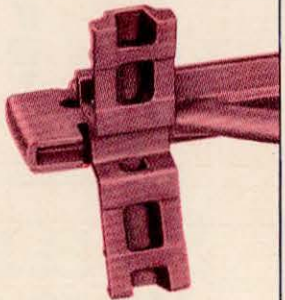
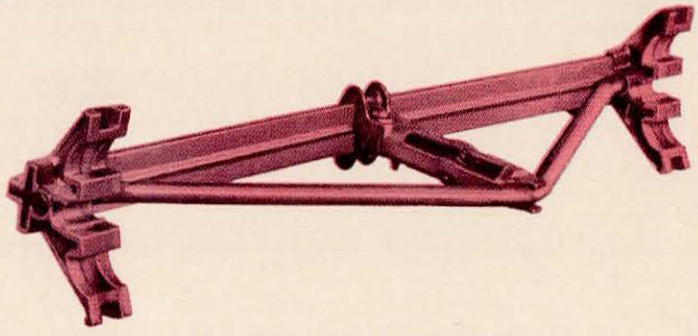


Forged truss ends correctly distributes pressures from brake heads.



For unit trucks—the Davis Solid Truss has been used on more than 3,500,000 unit-type brake beams.



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Railroads are exerting themselves to get more revenue ton-miles out of available freight cars and locomotives—to improve their net earnings and, of course, to assure a supply of equipment adequate to handle their traffic. Meeting this latter objective is, obviously, primary. No amount of skill at selling service, or at pricing it competitively, can produce results unless the railroads have the facilities to move the traffic that is offered.

Improved utilization of equipment—locomotives as well as cars—is, thus, a two-edged weapon. It adds to the necessary supply of equipment while, at the same time, it produces greater net earnings per unit.

Perhaps the best yardstick of freight-car performance is net ton-miles per (serviceable) car-day. This index moved upward 26% from 1958 to 1962. The improvement is heartening, but it is ascribable only in part to more efficient handling of cars. Almost half of the increased movement of pay-load came from the increase of 12% in the average load per car. Average car-miles per car-day also increased 12%; and it is this phase of car management that holds out the greatest opportunity for still further large-scale improvement.

The figures suggest why this is so. Car-miles per car-day averaged just under 50 in 1963, while freight-train speed averaged slightly more than 20 miles per hour. In other words, the average freight car was moving in a train 2½ hours per day, and the remaining 21½ hours it was being loaded or unloaded, or was otherwise standing still and not producing revenue.

Most of the improvements in railroad performance that are now being progressed have as their objective the securing of more daily miles of revenue service out of freight cars. The spectacular increase in daily miles of flat cars handling piggyback trailers has aroused a healthy spirit of competition among railroads—to push the performance of these cars even higher. The "integral" and unit trains make their great gains in per-unit revenue in the same manner—that is, by maximizing the ratio of daily hours that cars spend in hauling freight, in contrast to time they spend on sidings and in yards. And unit trains achieve this increased performance in loaded movement in spite of an empty return ratio of 100%.

In the spring, 1964 issue of the Transportation Journal (publication of the American Society of Traffic and Transportation), Economist William B. Saunders compares costs of coal handling in conventional trains with those in what he calls "shuttle service"—involving minimum delay for loading and unloading, minimum clerical expense, no switching expense, and heavily laden trains. For a typical 300-mile haul, he calculates movement costs at $2.62 per ton in conventional service and $1.19—or less than half as much—in shuttle trains.

Such numbers are speculative, of course—and precise figures would vary with the circumstances of particular hauls. But the order of magnitude of potential economies to be achieved by systematic handling, which minimizes stand-still time, are probably not exaggerated. The fact that so many competent railroaders have set their sights in this direction warrants the belief that tangible benefits are attainable.

Mr. Saunders then goes on to estimate that more than 20% of existing railroad traffic should be susceptible to movement in unit trains and, furthermore, that a relatively high ratio of traffic now moving by barge on the inland waterways should be suited to movement in unit trains, and might be attracted to the railroads if savings to patrons were sufficient.

Of course, a majority of railroad tonnage is not adapted to handling in unit trains—so this approach is not going to solve all the railroads' problems of getting more efficient utilization of equipment. Improved systems of handling conventional movements are also needed. Moreover, the load per car is also a factor in equipment efficiency that needs constant attention—and skilled pricing should provide a large part of the necessary incentive.

One key unlocks three doors

A great step forward in improving the economics of car supply was taken when the plan for variable rates of per diem charges was adopted. The problem posed by current methods of assessing demurrage charges (really a part of the problem of pricing of railroad service) is still unresolved. And no one would contend that the existing uniform per-mile charge for the use of cars not owned by railroads is ideal. Interest in this problem is widespread and deep, and some improvement in the direction of sounder economics will certainly be forthcoming before long.

There are many reasons why railroads are pressing forward their program for more efficient equipment utilization. Among these reasons are: (1) improvement in net earnings; (2) providing the means to price railroad service more attractively and more competitively, thus increasing traffic; and (3) raising money with which to purchase new and improved equipment, which is indispensable both to the railroads and to their customers.

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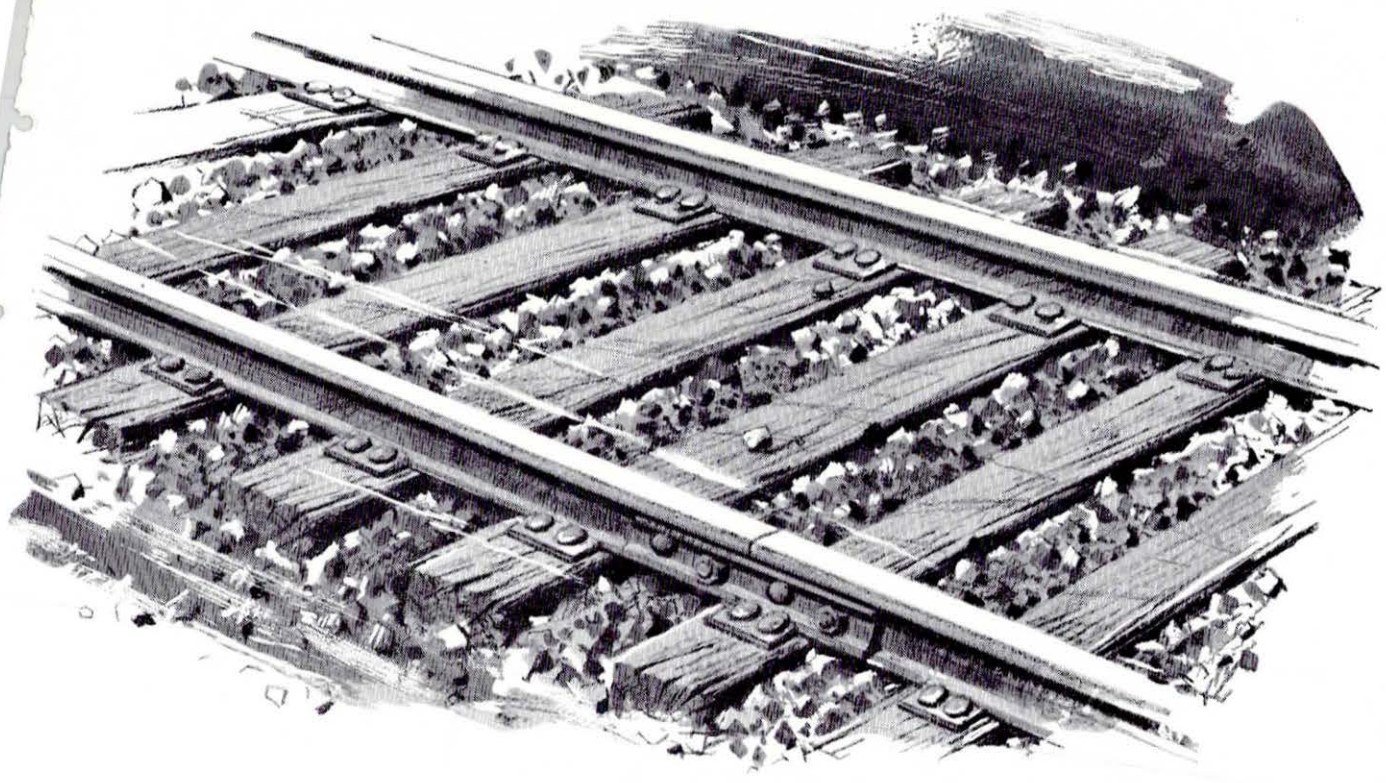

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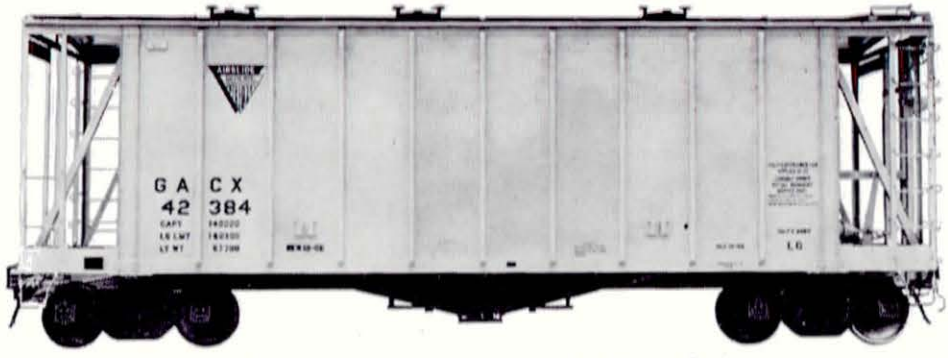

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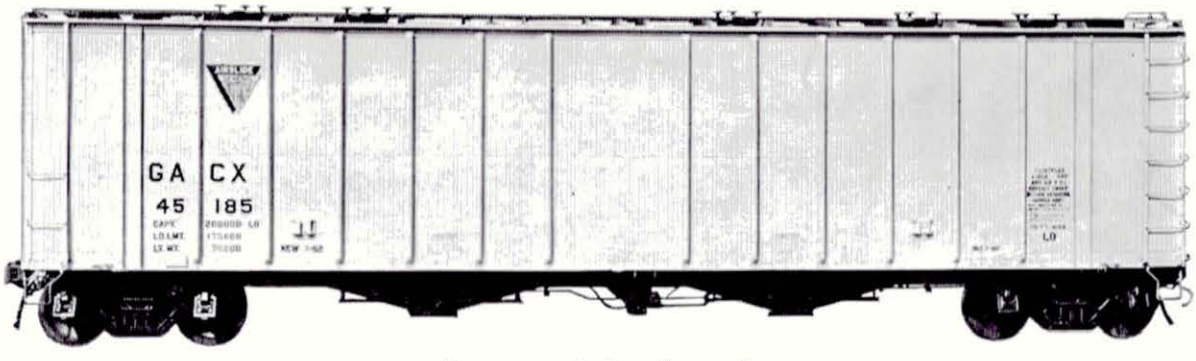

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